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THE BRITISH JOURNAL OF CHILDREN'S DISEASES.

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THE

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CHILDREN'S DISEASES.

VOL. XX. OCTOBER—DECEMBER, 1923. Nos. 238–240.

Original Articles.

PECULIAR FATAL CONVULSIONS IN FOUR CHILDREN, WHOSE FATHER SUFFERED FROM LEAD-POISONING.

By JOHN THOMSON, M.D.

ON October the 14th, 1920, I was asked by Miss Margaret Tod (medical student) to see a little boy aged 10 months, who was taking frequent fits of a serious and unusual nature.

Family history.—The mother was a very healthy and particularly intelligent woman, who said she had never had any illness except a nasal polypus. The father had died about six months before from nephritis and uræmia. He was a fairly sober man, except at New Year time. For five years before his death he had been employed in a rubber works, where his duties consisted in handling the raw rubber and looking after a small engine. I unfortunately omitted to ask at the time what he had done formerly.

My patient was the sixth child. The first two had always been, and still were, quite strong and healthy in every way. The third, fourth, and fifth children (two girls and a boy) had taken fits precisely similar in character to those which this baby had. These had begun at six months, three weeks, and nine weeks old respectively, and the infants had died at thirteen months, eight months, and nine months. There had been no premature births.

Previous history.—The baby was born after a normal labour; he was still on the breast when I saw him, and had thriven well in every respect

apart from the fits. He had had no other symptoms. His first tooth had appeared at five months.

Present illness.—The fits began suddenly when he was ten weeks old. There were no signs of indigestion or of rickets, and nothing had been noticed that could be blamed for their occurrence. The second attempt occurred a week after the first, and after that they became more numerous. They always set in during sleep, usually about 3 a.m., and he generally had one or two each night; but there were intervals of a few days during which he had none. He became very restless for a minute or two without waking, shook his head from side to side and yawned; then difficulty of respiration began with noisy, stertorous breathing, but without any crowing inspirations. His head sweated profusely and became very cold; he then gave a peculiar scream, "not like an ordinary cry," lost consciousness, and his eyes stared "as if he had no life in him," and his mother could no longer hear his breathing. At the same time the back and limbs were extended and the whole body stiffened; the hands were not clenched, and there were no clonic movements. After a minute or more the breathing became quick and easy, "as if he was getting his breath back," and consciousness returned. He then rapidly "came to himself, began talking his own language, and was ready for a good drink." After the fit he slept with his eyes half-open, but seemed otherwise all right. The fits had varied in severity; many were very severe, some were so slight "that only a mother would have noticed them," but on the whole they had been getting steadily worse in character.

On examination.—The patient was a most attractive little child. He seemed in excellent bodily and mental health, and nothing abnormal was found on physical examination. His head was quite normal in size and shape, as those of all the other children had been. He was free from rickets and very active in his movements—crawling quickly over the floor, and walking easily holding on to the chairs. He appeared unusually intelligent for his age, happy, good-natured and quick to notice any new sight or sound.

Progress.—He was given bromide of potash in increasing doses, and for a time the convulsions diminished in number, till he was only having one every eight or nine days. They tended, however, to be more severe in character, and he now wakened and cried before the respiratory difficulty began, and slept heavily for two or three hours after the attacks. His general condition remained good, and, a week after he was eleven months old, he was able to run about the room.

At fourteen months he began having the convulsions in the daytime, and on two occasions they set in with vomiting, although there were no

other signs of indigestion and the action of the bowels was normal. He had now eleven teeth, and when they were being cut the fits were more severe. He became cyanosed in them and "seemed as if he would choke." Once he had no attacks for seven weeks. He was talking freely, and very intelligent.

At sixteen months he was weaned. In the previous six weeks he had had five bad fits and two slight ones, mostly in the forenoon. The major fits were severe in character, although in some of them he did not seem to lose consciousness. He always remained exhausted for some hours after. The fontanelle was about a quarter of an inch in diameter. All this time there was no change in the baby's disposition or habits during the intervals between the attacks. He remained full of enterprise and interest in everything.

At seventeen months the severe convulsions were recurring at the rate of one a week; but also, nearly every day, there were peculiar slight turns of debility, distress and cyanosis. There was no pain or unconsciousness in these, but the child was very pale and more exhausted after them than after the more severe attacks.

On June the 11th, the child being now eighteen months old, the fits had been going on as usual, but he was less inclined than formerly to run about, though his mental condition was otherwise unchanged. That night he wakened vomiting, and had a severe fit in which he died. There was no post-mortem examination.

The only *diagnosis* made was that the attacks were quite different in character from any I had ever seen, and that as they had occurred in four children in the family, they were evidently due to some undiscovered morbid condition in one or both of the parents.

The father's previous health.—Some considerable time after the child died, Miss Tod discovered that, prior to 1915, the father had been a painter for twenty years, although he had been engaged in other work since that time. He had worked in a small dirty shop where they mixed their own paints and handled a great deal of white lead. Two of the other workmen died while he was there, one of them from nephritis.

In 1909 he had begun to suffer from indigestion—that was two years after his second (healthy) child was born, and a year before the birth of the first of the babies who took fits. At first the symptoms were slight, but gradually colic developed and became very severe indeed. He had also to discontinue his work from time to time on account of not being able to hold his hands up. The cause of these symptoms had not been recognised.

Later he suffered from severe headache and debility, and was told that his heart was dilated.

In 1920 he began to have polyuria, with stomatitis, emaciation, headache, drowsiness and delirium. He was admitted into the Royal Infirmary, and died soon after of "nephritis and uræmia."

Remarks.—On looking up the literature of lead-poisoning in infancy, and that on antenatal intoxications,* it appears to be a well-established fact that plumbism in the father only is sufficient to cause abortion, premature birth, and expulsion of macerated fœtuses in the mother, although she is healthy, and fatal convulsions in those children who survive birth.

Dr. Leonard Findlay has drawn my attention to the close analogy which exists, in this matter, between the results of lead-poisoning in man and those of alcoholism in guinea-pigs. Stockard† has shown, as the result of very numerous and careful experiments, that when alcoholised male guinea-pigs are mated with normal females a considerable proportion of sterility, abortions, stillbirths and malformations is produced; and also that debility and nervous symptoms occur in the surviving offspring. These bad effects are found not only in the first litter, but are present to some extent in those of the second and third generations. Such results can only be attributed to the spermatozoa having been seriously damaged by the poison.

The chief points of clinical interest in the case recorded above seem to be:

1. That all the children born after the father's lead-poisoning began were seriously affected, although the mother remained quite healthy.

2. That the patient continued, until near the end, in excellent bodily and mental health—apart from the fits; and showed no sign of rickets, indigestion, mental dulness or mental peculiarity.

3. That the attacks were very different in their phenomena from ordinary infantile convulsions—affecting the respiratory functions specially, and yet not resembling those in laryngismus or status lymphaticus.

While those who have written on the transmission of plumbism to children by their parents have all mentioned convulsions as the chief symptom occurring in those infants who survived birth, I have not been able to find any description of the details of these attacks, or any statement as to whether they had or had not the usual characters of infantile convulsions.

* An excellent summary of this is given by J. W. Ballantyne in 'Ante-natal Pathology,' "The Fœtus," 1902, p. 260.

† C. R. Stockard, 'Brit. Med. Journ.,' 1922, ii, p. 255.

SEVERE TUBERCULIN REACTIONS, SCROFULA, AND STATUS LYMPHATICUS.

By Charles McNeil, M.A., M.D., F.R.C.P.Edin.,
Physician, Royal Edinburgh Hospital for Sick Children.

Feeble, ordinary, and severe tuberculin reactions.—In this paper skin reactions are alone dealt with, but it may be taken for granted that the reaction to tuberculin is similar in vigour, whether applied artificially on to the surfaces or into the tissues of the body, or naturally distilled into the tissues from a tuberculous focus.

It is not easy to fix standards of reaction. In the skin tuberculin test (Pirquet) the amount of reaction will vary with the strength of tuberculin used, with the technique employed, with the time at which the reaction is observed and measured, and according as measurement is confined to the area of exudation (the papule) or includes also the area of reddened skin (the areola). This paper is based on my own observations with the test since 1909, with a definite constant technique and using undiluted old tuberculin. The papule was measured, and as a rule in from 24 to 48 hours after performance of the test. The depth or height of the papule is also a gauge of severity of reaction, as this indicates more or less exudation; but this variation cannot be exactly measured. Where exudation is extreme, a vesicle will form in the centre of the papule. This vesicle formation is a sure sign of a severe reaction, and is a rare event in my experience. Examples of vesiculation and even of ulceration in cutaneous tests will be given later.

With the methods and technique above described, and after a large experience of the test, I have found that the great majority of positive tuberculin skin reactions develop a papule of 5 to 10 mm. in diameter in one or two days. I suggest a further rough division of this large group into *feeble* reactions, where the papule is flat, and often pale and small; and *ordinary* reactions, where the papule is well raised, red, and from 5 to 10 mm. There remain a few reactions where the papule exceeds 15 mm. (the exact figure is arbitrary), and may reach to 30 or even 40 mm. with the formation of a vesicle or ulcer in the extreme cases. To these few and exceptional reaction cases I would give the name of *severe* reactions; they form the subject of the present paper.

Feeble reactions are met with in extensive or acute tuberculosis, *e. g.* in miliary tuberculosis, and in the late stages of pulmonary and abdominal tuberculosis and tuberculous meningitis. Where they are found, the children are very weak, wasted and anæmic. This clinical group is said by many writers often to give negative reactions. My own view is that

if the test is properly performed, and not recorded as negative until after a week, feeble positive reactions will be obtained even in these extreme cases ; and in a recent paper (1) I have given examples of positive reactions in advanced tuberculosis within a few days of death when weakness and emaciation were extreme.

Ordinary reactions are found in my experience in limited or local tuberculosis (smaller or larger foci in lymphatic gland or bone) and also in the early stages of acute or general tuberculosis ; they occur in children whose nutrition and general vitality are as yet not seriously impaired.

My experience of feeble and ordinary reactions suggests that the amount of reaction corresponds directly with the general vigour and irritability of the whole body, of which the irritability of the individual tissues subjected to tuberculin is only a part ; and that it has no definite or direct relation to the amount of tuberculous disease present. Indeed, the relation may be an inverse one, a feeble reaction occurring in extensive tuberculous disease, and a severe reaction, as we shall presently see, occurring where the tuberculous disease is small and limited. I think it is true to say that tuberculin reactions, so divided into feeble and ordinary reactions—the groups are rough, but have clinical value—correspond to feeble tissues and to ordinarily reacting tissues.

Severe reactions.—What, then, is the significance of severe reactions ? In the first place, and taking 15 or 20 mm. as the standard, they are, in my experience, very uncommon. But in what types of tuberculous infection do they occur ? and what is their significance ? These two questions form the subject of this communication.

Special Group of Severe Reactions.

In 1911 I obtained a large group of severe reactions under special and interesting circumstances, and my attention was then first drawn to the subject. In that year Dr. J. P. McGowan and myself were asked to investigate peculiar outbreaks of illness in an industrial school for boys near Edinburgh. In each outbreak three types of illness could be distinguished—cases of death in coma after a few hours of illness, cases of pneumonia, irregular in type and of low mortality, and cases of feverish illness with sudden onset of sharp symptoms but rapid recovery. These outbreaks had taken place over a period of ten years, and there had been an extensive and severe one a month before, which called for a thorough inquiry into the matter. Our investigation (2) included a searching clinical examination of the whole school of 170 boys, their ages ranging from 6 years to 16 years, but a majority being from 10 to 16 years. This examination included the cutaneous tuberculin test, and the test was found to be positive in 101 boys, or in about 60 per cent.

This incidence of positive reactions was not surprising, in view of published statistics as to high incidence of these reactions in apparently healthy children. But I was much impressed by *the severity of the reactions*. The number of these severe reactions was a new fact to me, although at that time I had already had a fairly large experience of the test, and had just completed a series of nearly 400 hospital cases. Only a few measurements were made, but I roughly graded these industrial school reactions into four groups, according to the size of the papule, estimated by the eye. Groups 1 and 2, which would correspond to ordinary reactions as defined above, contained 26 and 48 cases respectively. Group 3, most of which may be assumed to have been above 20 mm. in diameter, included 22 cases. Group 4, the extreme degree of severity, consisted of 5 cases. Of these 5 cases of extreme severity I measured 3, and in them the long diameter was between 35 and 40 mm. ; the remaining 2, not measured, were approximately of that exceptional size. Of the 5, 3 of the papules showed a large central vesicle, two of these vesicles containing a blood-stained fluid.

It was beyond doubt that in this school of boys and young lads there was a quite remarkable number of severe tuberculin reactions as compared with hospital children.

I therefore tried to get a control for this peculiar fact by carrying out the test in another industrial school in the same area, where the boys were drawn from the same social class, and were of similar age, but free from the mysterious outbreaks of illness. Here the positive reactions were 14 per cent., and all these reactions were in groups 1 and 2. Severe reactions were absent. It should be noted further that the same sample of tuberculin was used in both schools, and was tested also in hospital cases at the same time, and failed to produce severe reactions elsewhere.

Along with these severe reactions, two other sets of facts were obtained in the course of our investigations which have a bearing on the subject of this paper, one clinical, the other pathological.

Chronic catarrhs.—In the first place, the physical examination of the boys revealed the unusual prevalence of chronic conjunctivitis, chronic nasal catarrh, and also of eczema of the face. The cases of conjunctivitis numbered 60 (37 per cent.), a chronic indolent catarrh together with a peculiar granular thickening at the lower reflexion of the conjunctivæ, so that the everted lower lids showed here numerous small projecting studs. I regarded these granulations as aggregations of lymphoid tissue. Cases of chronic nasal discharge were 85 (50 per cent.), and there were 8 definite cases of facial eczema.

Status lymphaticus.—The second associated finding was a pathological

one, and was obtained at post-mortem examination of the cases of rapidly fatal illness. This was the condition of status lymphaticus, or general lymphoid hyperplasia. In ten years there had been 22 cases of mysteriously sudden death, associated with many other cases of the non-fatal types of illness. In 12 cases the duration of illness had been less than 24 hours, and in 2 of these the boys had gone to bed well, and had been found dead in the morning, death having apparently taken place during sleep. In the remaining 10 cases the duration of illness had exceeded 24 hours, but had been less than 48 hours. In nearly every case coma had preceded death. Post-mortem examination had been carried out in 14 of these 22 cases. The records of these examinations were in some cases incomplete; but over all there was in a majority of cases (10) mention made of prominence of lymphoid tissue, enlargement of the thymus, of the lymph-follicles behind the tongue, of the lymphoid tissue under the duodenal mucous membrane, of the Peyer's patches and solitary glands at the lower end of the ileum. These autopsies included 3 made by McGowan and myself: in the first of these there was enlargement of the thymus, and notably also of the post lingual lymph-follicles; in the last two there was a general definite lymphoid hyperplasia throughout the alimentary tract, and photographs of this hyperplasia were published with the full report of the inquiry.

It is convenient to mention here that the other morbid condition commonly found at autopsy was inflammation of the lung, nearly always in an early stage. This condition of early inflammation of the lung was found in 13 out of 14 autopsies. From these and other facts it was concluded that the cause of death in these rapidly fatal illnesses was pneumonia, and that its fulminant character was due to the pre-existence of the obscure morbid condition status lymphaticus; that the other two non-fatal types of illness were also cases of pneumonia, their irregular character being likewise explained by the existence of the same morbid diathesis. After investigation along many lines, no explanation was offered of the existence on this epidemic or endemic scale of the condition of status lymphaticus. But an examination of the records of other industrial schools showed that in some of them similar outbreaks of illness had occurred, and that their post-mortem records contained also hints of the presence of status lymphaticus.

It is now suitable to return to the question of the severe tuberculin reactions obtained at this school, and to discover if possible an explanation. I examined the literature of tuberculin reactions, then a comparatively new subject, and discovered a paper by Escherich,(3) written in 1909, and under the title "What do we call Scrofula?" dealing with this very question of severe tuberculin reactions.

In this paper three statements were made, which seemed to bear directly upon the problem of the large number of severe reactions obtained at this industrial school. First, that in scrofula severe tuberculin reactions are the rule, sometimes reaching an extreme of 40 mm., and never being less than 10 mm. Secondly, the characteristic lesions of scrofula were chronic blepharitis, phlyctenular conjunctivitis, chronic nasal discharge, thickening of the upper lip, eczema of the face, and the various types of scrofulodermia (the tuberculides), these lesions being often associated with tuberculous disease of the lymph-glands of the neck and abdomen and tuberculous bone disease. Thirdly, these scrofulous lesions were related to and depended on the abnormal constitution, status lymphaticus, which was in existence before the occurrence of tuberculous infection. The effect of this morbid diathesis was to increase the sensitiveness of the skin and mucous membranes to tuberculin and to other non-tuberculous irritants.

These three statements seemed to supply exact parallels to the conditions found in this industrial school, namely a large number of severe tuberculin reactions, a large group of cases of scrofulous(?) catarrhs of the eyes and nose and face, and definite post-mortem evidence of status lymphaticus in boys dying of what appeared to be fulminant pneumonia. Indeed, with regard to status lymphaticus positive data were furnished from autopsies, while Escherich offered no such definite proof, only referring to the opinions of other writers—Hafeland, Baudelocque, and the more recent papers of Czerny who had revived the languishing interest in scrofula by describing it as a complex of tuberculous infection with the exudative diathesis. The opportunities of post-mortem examination of cases of scrofula (assuming for the moment the condition as a clinical entity) are few as compared with other types of tuberculous disease, and the clinical stigmata of lymphoid hyperplasia are too uncertain. But in this industrial school the deaths from acute pneumonia and the findings of lymphoid hyperplasia after death, together with the prevalence of lesions resembling scrofula among the living, gave the opportunity of testing these theories as to the connection between the forms of tuberculosis termed scrofulous and the condition status lymphaticus.

At any rate the facts were clear enough—a large group of boys giving severe tuberculin reactions, the prevalence of obstinate catarrhs of eyes and nose, resembling scrofula, and post-mortem findings of status lymphaticus. Escherich's paper convinced me that these facts were not independent, but connected ; and that those boys giving severe tuberculin reactions were the subjects of the condition status lymphaticus, and that the severity of reaction was in some way due to this obscure condition, just as was the severity of reaction to pneumonia.

Sporadic Severe Reactions.

The special group of severe reactions made me now watch closely for sporadic cases of severe tuberculin reaction in hospital practice. It was important to pick out all such severe reactions and find in what types of tuberculous infection they occurred, and especially to test this suggested association with scrofulous lesions. The war intervened and completely interrupted the search, and in any case the number of severe reactions in hospital practice is small. But the results have been to confirm Escherich's statements and my own experience in the industrial school. They have shown that sporadic cases of scrofulous tuberculosis as defined by Escherich, and especially cases of scrofulous conjunctivitis, give unusually severe tuberculin reactions. One or two cases were also met with giving severe reactions, and yet not manifesting typical scrofula. This small number of severe reactions represents only a small fraction of the ordinary and feeble reactions obtained during this period. There were no deaths among the cases of severe reactions; and so no post-mortem evidence of status lymphaticus was forthcoming. I shall now give short reports of some of these cases.

Cases of Sporadic Scrofula.

Case 1.—Girl (A. R—), aged 1 year 9 months. Chronic catarrhal conjunctivitis of both eyes with blepharitis and photophobia (the eyes being kept tightly shut). No local tuberculous disease found in bones or glands, or in abdomen or thorax. General nutrition rather poor. Tuberculin reaction very severe; vesicle formation, followed by a deep ulcer—a rare event in my experience.

Case 2.—Girl (M. C—), aged 2 years 6 months. On admission profuse catarrh of eyes and nose, with phlyctenular conjunctivitis and photophobia, also a marked general scrofulodermia of large brown macular tuberculides on arms, legs and face, some of the skin lesions being small ulcers. A severe stomatitis. Tuberculous dactylitis of left middle finger. Tuberculin reaction, even more severe than in Case 1; a large hæmorrhagic vesicle forming, followed by sloughing of the skin and ulceration. Slowly improved in hospital, and went home after four months, having gained 3 lb. in weight. No other tuberculous lesions in neck, thorax or abdomen developed.

Case 3.—Boy (A. G—), aged 2 years 2 months. Chronic blepharitis, conjunctivitis and nasal discharge, with moderate photophobia. No other tuberculous focus found in neck, thorax or abdomen. General nutrition fairly good. Tuberculin reaction, 20 mm. Improved in hospital, but relapsed, and was readmitted ten months later in a similar condition and again gave a severe tuberculin reaction.

Case 4.—Girl (C. L—), aged 3 years. Chronic blepharitis, conjunctivitis and photophobia. Emaciation, with marked dwarfing and rickets, but no clinical evidence of tuberculosis. Tuberculin reaction, late in appearing, but then forming a livid raised papule of 13 mm.

Case 5.—Boy (T. S—), aged 4 years 6 months. Chronic blepharitis, conjunctivitis and rhinitis, with marked photophobia, also commencing lupus of nose, face and arms. General nutrition good; no other tuberculous focus found. Tuberculin reaction severe.

Case 6.—Girl (I. G—), aged 7 years. Conjunctivitis with intense photophobia, the child keeping her head buried in the pillow during the day. No tuberculous disease found in neck, thorax, abdomen or elsewhere. General health fairly good, though the child was small and somewhat pale. Tuberculin reaction severe, an unusual feature being a trail of vivid lymphangitis leading from the papule and areola to the bend of the elbow.

Case 7.—Boy (J. N—), aged 6 years. Eyes healthy, but otherwise a case of scrofula according to the classical description. Long dark eyelashes, deeply pencilled eyebrows,

broad nose, with signs of old standing discharge; thick and elongated upper lip; mass of tuberculous glands on both sides of neck; tuberculous peritonitis and ascites. General nutrition poor. Tuberculin reaction slow in appearing, but 16 mm.

Commentary.—With regard to the cases of scrofulous or strumous conjunctivitis, all my cases have given positive reactions and all these reactions have been severe. They form a very definite and easily recognised clinical group, and often are found without any apparent tuberculous lesions elsewhere. It is maintained that some of these cases are non-tuberculous, forming the cases of pyogenic and non-tuberculous scrofula of Cornet; but there is general agreement that the great majority of these cases of strumous or phlyctenular conjunctivitis are associated with tuberculous infection. But the observation of Escherich, which my own experience has confirmed, namely, that in these types of tuberculous infection the reaction to tuberculin is unusually severe, is not generally known, and yet, if it is true, it may help to explain the special character of the infection in those cases.

It is well also to call attention to the fact that tuberculous cases showing any of the varieties of skin lesion known as tuberculides, likewise show severe reactions to tuberculin; and do so whether showing other scrofulous lesions or not. Case 2 is a good example of this.

In this group of sporadic cases of scrofula there were no deaths while the children were in hospital (Case 7 died a few months after leaving hospital), so that no direct evidence of status lymphaticus in them can be offered.

Severe Tuberculin Reactions, without Scrofulous Catarrh.

It is important to refer to a few cases giving severe reactions, which showed few or none of the scrofulous stigmata.

Case 1.—Boy (J. C—), aged 11 years. Undergrown, but of fair nutrition. Admitted with slight fever and a moderate effusion in the right pleura. First reaction severe, with formation of a vesicle. Long and thick eyebrows and eyelashes, but no catarrh of eyes or nose, and no apparent tuberculous focus apart from the pleural effusion. Visible enlargement of thyroid, and also visible enlargement of lymph-tissue at the back of the tongue. Satisfactory recovery. Readmitted for observation 2 years later, when he showed no signs of local tuberculous disease. But his tuberculin reaction was still severe (14 mm.), showing streaks of lymphangitis leading from the papule; and there was still visible swelling of the thyroid and of the lymph-tissue behind the tongue.

Other two examples of severe reaction were given by a case of latent glandular tuberculosis of the thorax and abdomen in a boy of nearly 12, and by a case of severe rheumatic infection with cardiac involvement in a boy of 11½. These complete my cases of sporadic severe reactions.

Remarks on Scrofula.

Scrofula has almost dropped out of British text-books of medicine and pathology in the sense of denoting a disease or a definite clinical con-

dition. And yet scrofula is an old word and of royal lineage, going back to the days of Galen and Hippocrates, both of whom described the condition and discussed its cause. It never ceased to be mentioned in medical writings, and to be accepted as a disease *sui generis*, until Koch discovered the tubercle bacillus. With that discovery scrofula as a separate entity seemed to have received its death-blow, and alike by pathologists and physicians was now merged in the great and many-sided disease tuberculosis. A few clinicians, however, and among them men of great experience and sound judgment, accepted with reluctance this identification of scrofula with tuberculosis. Henoch (4), while accepting Koch's demonstration of the tuberculous virus in scrofula, could not reject the evidence of his own clinical experience that "the morbid processes of scrofula are extraordinarily different from those of tuberculosis," and expressed the opinion that in scrofula there is as well "an abnormal condition of the blood, or of the tissue-elements, or of both." Sir William Jenner (5), writing in 1894 a new preface to his 'Lectures on Rickets, Tuberculosis,' says, "I have not altered the paragraphs relating to the difference between scrofula and tuberculosis. For although recent histological researches have shown the identity of their pathological products, yet I still hold that the constitutional states which precede the local manifestations are of a different type in these two disorders and deserve separate consideration."

Soon after, Czerny (6) revived the old doctrines of diathesis, temperament, constitution, which had been embedded in medical theories of scrofula since the days of Hippocrates. He described scrofula as a tuberculous infection associated with the morbid constitution status lymphaticus; and status lymphaticus was allied to and perhaps identical with the condition termed by him "the exsudative diathesis." This teaching as to scrofula was accepted by Escherich, Moro and others. Cornet (7), too, held and taught similar views, which may be summarised as follows: Scrofula is a complex, of which one element is an abnormal constitution, while the other is the working of injurious or infective agents on this constitution. The nature of the diathesis is an abnormal permeability of the skin and mucous membranes, and an undue irritability of the cellular elements of the lymph-glands. This condition is the normal state of affairs in the infant and child, but it may become exaggerated, and then it becomes the scrofulous diathesis. The diathesis only becomes revealed as scrofula when the child is attacked by various infective agents, which may be tubercle bacilli or pyogenic organisms; it then manifests the various types of scrofulous lesions. Cornet claims that there are three clinical types of scrofula—tuberculous, tuberculo-pyogenic, and pyogenic. He gives the diathesis the name of embryonalism, because it is simply a

heightening of the normal constitution of the child which he names infantilism.

There is no doubt that these views of Czerny and Cornet are the ancient teachings as to humours, dyscrasia and diathesis, dressed up in modern terminology; and the stubborn vitality of these very old doctrines is a curious and interesting thing. We may say then that there is a group of physicians and pathologists in our own generation who hold that in scrofula there is something more than tuberculous infection; that this other factor is some alteration of the body which precedes the scrofulous manifestations and explains their special character; and there is agreement that this constitutional alteration may be called status lymphaticus. It is convenient, therefore, at this point to discuss briefly the condition status lymphaticus.

Remarks upon Status Lymphaticus.

There is perhaps less scepticism about status lymphaticus as a morbid condition than there is about scrofula. It is generally accepted as a morbid condition associated with cases of unexpectedly sudden death, of which the marks are a hypertrophy of the thymus and other lymphoid tissues, but of whose origin and pathological significance little is known. It is not necessary now to allude to the many theories of status lymphaticus that have been held, but it may be worth while to summarise present knowledge and opinion on two important aspects of the subject: (1) What are the clinical manifestations of the morbid condition? (2) What is its morbid anatomy? I think it is possible to show that in both respects our knowledge has advanced in recent years.

Clinical manifestations.—The older examples of status lymphaticus were confined to examples of sudden death in perfect health—healthy infants found dead in bed after the application of poultices, the use of the hypodermic needle, death in anæsthesia for trivial operations, death on falling into water. But the clinical group has now been enlarged by the inclusion of fulminant types of infection during childhood and adolescence, measles, diphtheria, scarlet fever; and in current German text-books on diseases of children these fulminant types of infection are accepted as associated with and explained by status lymphaticus. With regard to pneumonia, Paltauf (8) pointed out that in the majority of infants found dead in bed early pneumonia was the cause of death, and he refused to allow any part to the condition of lymphatism that was also present. In the present paper a series of fatal cases of fulminant pneumonia has been alluded to, these cases of pneumonia being associated with definite post-mortem evidence of status lymphaticus; along with these fatal illnesses there were a large number of cases of sharp but irregular pneumonia,

and in the same school the prevalence of mild scrofula and an unusual severity of tuberculin cutaneous reactions. So that in the same special population of a school there was shown unusual reaction to two common infections, pneumonia and tuberculosis, associated with status lymphaticus.

Other examples could be given, but enough has been said to justify the extension of the clinical field of status lymphaticus. It is not confined to cases of sudden death in apparent health. It includes certain fulminant cases of acute infections such as pneumonia, scarlet fever, measles, etc., which terminate fatally in a few hours ; and probably also non-fatal but irregular types of the same diseases characterised by sudden onset and sharp clinical reactions. And it also includes cases of tuberculosis, which are often mild in their effect upon the general health, but are severe in their local effect and in the reactions they provoke locally ; these cases constitute the group of scrofula—a word worthy to be retained on other grounds than those of sentiment and history.

The conception of status lymphaticus as a condition essentially associated with sudden death has enjoyed too exclusive and too dominant a position in medical teaching and opinion. It is more correct to regard it as a condition consistent with sound health and vigour, but also characterised by intensified reactions to all kinds of stimuli and influences. These influences may be sensory stimuli, such as a loud sound or a sharp prick of the skin by a needle ; they may be the pharmacological action of a drug, such as chloroform, or they may be any kind of bacterial action, local or general, acute or chronic. To all these kinds of action on the body, there is in the condition of status lymphaticus a more violent and explosive reaction than is normal. And further, it seems reasonable to suppose that there may be variation in the degree of status lymphaticus, with a corresponding variation in the intensity of the reactions.

Morbid anatomy of status lymphaticus.—It seems possible also that too narrow and exclusive views have hitherto been held as to the morbid anatomy of the condition. For a great many years the thymus was regarded as the most important organ and the seat of the morbid condition, and was held to cause death by pressure on the trachea, by pressure on nerves and blood-vessels, or by the secretion of a powerful poison. Classical cases, however, of sudden death occur without thymus enlargement, but with notable enlargement of other lymphoid tissues distributed along the alimentary tube, the base of the tongue, the stomach and duodenum, the lower end of the ileum and the large bowel. And with the experience of such cases, the thymus has ceased to hold its former predominant position, and the discovery of lymphoid hyperplasia in one or more of these other situations is held to establish the condition status lymphaticus.

But there is evidence that there are other morbid changes in the body than those of lymphoid hyperplasia in cases of sudden death and in the other clinical manifestations of status lymphaticus; and especially in those important glands of internal secretion, the thyroid and the adrenals.

Thyroid hyperplasia.—In all cases of fatal status lymphaticus where I have had the opportunity of examining the thyroid with the microscope, a condition of definite and often of extreme hyperplasia was present. There were the appearances of an unusually active secretion. These cases included infants found dead in bed, boys from the school alluded to dying of fulminant pneumonia, and also a case of fulminant scarlet fever; and illustrations of the appearance of the thyroid gland have already been published. Paltauf (8), in his description of the morbid anatomy of three cases of status lymphaticus in young adults, mentions a visible enlargement of the thyroid gland in one of them. Wynn (9), in a series of cases of status lymphaticus, gives a detailed description of thyroid hyperplasia in every case. There are a few references to the same condition scattered throughout the literature, but on the whole the condition of the thyroid has been almost wholly neglected in status lymphaticus.

Adrenals.—Wiesel (10) has paid attention to the adrenals in status lymphaticus and finds an almost complete absence of chromaffin substance in the medulla, and this observation has been confirmed by others. He advances the hypothesis that the sudden death in status lymphaticus is an adrenal death.

Morbid changes have also been reported in other glands of internal secretion in status lymphaticus—in the ovary and testis for example. And this recent discovery of disturbance in the glands of internal secretion has led Biedl (11) to give the following general definition of status lymphaticus: "It has perhaps its origin during fœtal life in flaws of structure and in defective development of a series of hormone-producing organs, which later lead to polyglandular insufficiency and disturbance of the balance of internal secretions."

The discussion of the origin of status lymphaticus may well be left over until its morbid anatomy is thoroughly established and worked out, and that up to the present has not been done. But it would be of very great importance if it were shown that in status lymphaticus lymphoid hyperplasia were regularly accompanied by morbid changes in the thyroid and adrenals.

Status lymphaticus and exophthalmic goitre.—My own observations of status lymphaticus have always demonstrated a definite hyperplasia of the thyroid in those cases. Where lymphoid hyperplasia has been present, thyroid hyperplasia has also been present, and I have so far

failed to find that definite degree of thyroid hyperplasia without accompanying lymphoid hyperplasia. The two conditions are present together, or they are both absent.

This suggests a curious and close parallel between the morbid anatomy of status lymphaticus and of exophthalmic goitre. In both there seems to be a frequent if not regular association of thyroid and lymphoid hyperplasia. There are obvious clinical differences between the two conditions. The exophthalmos, the tachycardia, sweating and tremor do not occur in status lymphaticus. But status lymphaticus is a condition of childhood or early adolescence, while Graves's disease is a condition of late adolescence and mature age. Exophthalmic goitre is so extremely rarely found in childhood, then only in late childhood, that it may be said not to exist at this period, while cases of status lymphaticus in the accepted definition of sudden death are equally rare in adult life. Further, both conditions are liable to the complications of sudden death and of rapidly fatal infections.

It is perhaps not too fanciful to suggest that the two conditions occurring at two different age-periods are really one, and having a like morbid anatomy of thyroid and lymphoid hyperplasia, are produced by the operation of the same cause or causes. This suggestion is put forward as a hypothesis which might deserve consideration—one which is grounded on some facts of morbid anatomy and not built entirely in the air. The further suggestion may be made that some cases of exophthalmic goitre may be the residue of a condition of status lymphaticus in childhood.

Conclusions.

1. In a small number of cases of tuberculous infection the tuberculin cutaneous reactions are unusually severe.

2. In a majority of such cases of severe tuberculin reaction the type of lesion is that formerly described as scrofulous, and commonly includes a scrofulous or phlyctenular conjunctivitis.

3. There is evidence that such cases of scrofula are associated with the condition status lymphaticus.

4. The term "scrofula" should be retained as denoting those types of tuberculous infection which are associated with the morbid condition status lumphaticus, and which in consequence exhibit an intensified reaction to the tubercle bacillus and its poisons.

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A CASE OF TUBERCULOSIS IN INFANCY.

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Tuberculosis is an uncommon disease of the neonate. Though this infection undoubtedly may occur during the intra-uterine period, it is rare. In most of the examples of tuberculosis in infants the disease has been acquired after birth, either by inhalation or by ingestion of tubercle bacilli. The case here recorded, in which death occurred on the 41st day after delivery, emphasizes the difficulty of deciding by which route the baby has been infected.

The mother, aged 29 years, was admitted to the Liverpool Maternity Hospital on July the 17th, 1922, to undergo Cæsarian section for pelvic deformity. She had previously passed through five labours, all of which were instrumental and resulted in stillbirths.

Cæsarian section was performed by Dr. J. E. Gemmell at 9.30 a.m. on July the 18th, 1922, and a full-term male infant weighing 8 lb. 12 oz. and measuring 20 in. in length was delivered. He appeared to be quite normal. The placenta, umbilical cord and membranes appeared macroscopically normal and were not saved for histological examination.

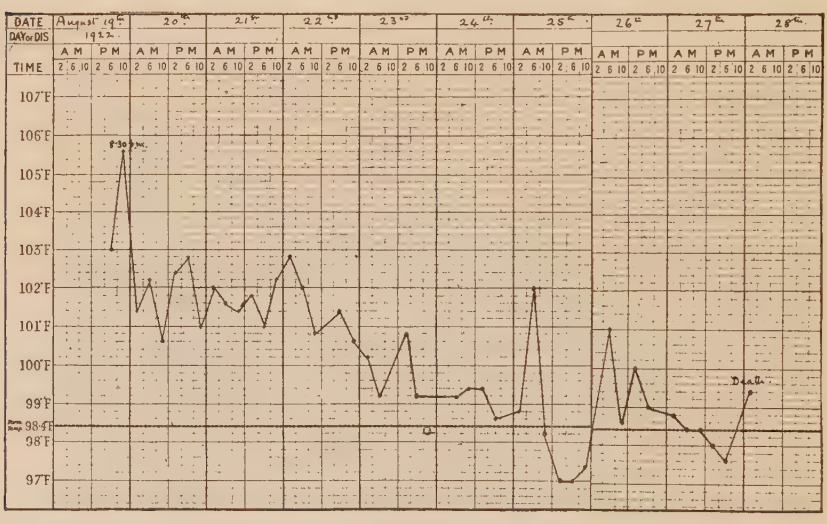
The mother's temperature rose to 101·6° on the afternoon of July the 18th and continued to run a remittent course until she died on August the 31st—the 44th day after delivery.

Autopsy showed that death was due to acute miliary tuberculosis. Microscopical sections of the lungs, brain, spleen, kidneys and uterus showed the presence of tubercle bacilli. To the naked eye the Fallopian tubes and ovaries appeared normal.

During the first few days after birth the infant was put to the breast several times. When it was found that the mother's temperature did not fall, artificial feeding with suitably diluted cow's milk was employed; but the baby wasted progressively, and on the 14th day weighed only 7 lb. 7 oz. His buttocks became sore, and it was decided to substitute

"Cow and Gate" for cow's milk. Wasting continued, and pyrexia developed on August the 19th (see attached chart).

I was asked to see the infant on August the 20th, and I found him to be marasmic and of a bluish colour. There were no physical signs of lung disease. The abdomen was distended, but not rigid or tender on palpation; the spleen and liver could be felt extending downwards to the level of the umbilicus. The buttocks showed signs of recent irritation, but the skin had healed again. A small dose of Dover's powder which had been given during the previous night probably accounted for the pupil-contraction which was observed. Rectal lavage was employed,



but did not relieve the abdominal distension. Milk feeding was stopped, and sterile water only was given for 24 hours. After this interval diluted peptonised cow's milk (1 part of milk to 3 parts of water) was given in $1\frac{1}{2}$-oz. feeds every 3 hours. Progressive deterioration took place; increasing sallowness was noted, but no further evidence of local disease was discovered. Death took place early in the morning of August the 28th, 1922.

The autopsy upon the infant was performed by Dr. Ruth Nicholson, to whom I am indebted for her assistance.

The organs showing the most marked pathological changes were the lungs, spleen and liver.

The right lung weighed 95 grm. and the left lung weighed 105 grm. In all the lobes of both lungs were numerous yellowish-grey tuberculous masses of elastic consistence, varying in size from a pin-head to a cherry-

stone; in some areas they had fused together to form larger zones of more irregular outline. No caseation was found. Those granulomata lying upon the surface of the lung were raised above the level of the surrounding pulmonary tissue, which was congested. Upon the diaphragmatic surface, and to a lesser degree upon the other surfaces, minute congested vessels were seen overlying the tubercles.

The bronchial glands were harder than normal, and on cutting were found to be filled with homogeneous greyish-yellow material. The spleen weighed 32 grm.; its dimensions were 8·2 cm. by 3·8 cm. by 2·5 cm. The normal shape had been maintained. It contained very numerous nodes similar to those seen in the lungs; the centre of one such granuloma appeared to be undergoing caseation. The surface of the spleen was irregular by reason of the protrusion of superficial nodes, and in places it carried a thin layer of feebly-adherent fibrin. The splenic tissue lying between the tuberculous masses was congested, and of a deep reddish-blue colour.

The liver showed the presence of smaller and more scanty tubercles scattered upon its surface and throughout its substance. The pancreas appeared to be normal macroscopically. The lymphatic glands occupying the root of the mesentery were filled with tuberculous masses.

Microscopical sections were made of various viscera, and the following features were noted:

Thymus.—There appeared to be atrophy of lymphoid tissue. That which remained was in strands, separated, though not sharply, by very loose connective tissue, with stellate and spindle cells; it bore some resemblance to Whartonian jelly. Within the connective tissue were large thin-walled vessels distended with blood which was partially coagulated. The lymphoid tissue was of loose structure, and its connective tissue reticulum was more apparent than usual by reason of the sparseness of lymphoid cells.

Hassal's corpuscles were very numerous, and were scattered throughout the lymphatic tissue. Their size was very variable, and their central bodies appeared to be unusually retracted from the enclosing refractile membrane. The smaller central bodies consisted of concentric red-stained rings, of the same colour as the erythrocytes; in the larger central bodies a pink-staining granular substance was also seen.

At two points small but definite areas of cellular degeneration and necrosis with caseation were seen. No special cells were visible in these zones.

Spleen.—On examining the section with the naked eye one noted a mosaic appearance, paler and darker areas being scattered throughout.

Microscopically it was obvious that more than half the total splenic tissue had undergone necrosis and caseation. The destroyed areas were more or less circular in outline. They consisted peripherally of a loose reticulum in which fairly numerous small round cells were scattered; centrally they were formed by granular, poorly-stained caseous masses. No giant-cells were seen. That portion of splenic tissue unoccupied by tubercles was infiltrated with erythrocytes and erythroblasts to a degree such that it resembled a blood-clot. Only a few Malpighian cell-systems, with central blood-vessels, were visible.

Liver.—The liver-cells showed well-marked cloudy swelling and fatty degeneration; they were separated from each other by spaces containing numerous erythrocytes.

Many tuberculous granulomata of various sizes were seen to be scattered at random throughout the section. They were of roughly spherical shape and consisted of a central mass of granular necrotic liver-tissue, stained a fairly uniform pink colour with eosin, and a surrounding zone of cells resembling epithelioid cells. The latter were not numerous; some contained dark granules of pigment. No giant-cells were seen.

Lung.—This organ showed profound tuberculous changes. The alveolar walls were thick and contained numerous small round cells and epithelioid cells; plasma-cells were scanty and no giant-cells were seen. Caseation had occurred in places. A few "scavengers" containing pigment-granules were noted. The alveolar capillaries were congested.

Most of the alveoli were filled with slightly granular caseous material, stained greyish-blue, and containing scanty cells undergoing degeneration. Remains of degenerated bronchial epithelium occurred in places.

Pancreas.—No definite tuberculous changes were seen. The section did not show that regularity of structural arrangement which is seen in normal pancreatic tissue and the secretory cells appeared to be unhealthy.

Some of the cells composing islets of Langerhans seemed to have separated from each other.

Mesenteric glands.—These showed almost complete necrosis and caseation at their centres. Blood-vessels surrounded by a cellular infiltration could be seen coursing through the degenerated tissue.

The periphery of the glands consisted of a poorly-developed connective-tissue framework in the interstices of which were small mononuclear cells, polymorphonuclear leucocytes, erythrocytes, erythroblasts, and very scanty large pale circular cells containing more than one nucleus. No typical giant-cells were seen.

Thyroid gland.—Most of the alveoli were distended with clear pink-staining colloid. The epithelium seemed to be flatter than normal, even in the undistended vesicles.

Two small patches of necrosis were found ; these areas were occupied by granular material which took the stain poorly.

Sections of various tissues, stained with carbol-fuchsin and decolorised, showed the presence of huge numbers of acid-fast bacilli morphologically indistinguishable from the tubercle bacillus. These micro-organisms occurred most plentifully in the lung, liver and thymus.

The following are the possible channels of infection by which an infant may become tuberculous :

1. *Germinal infection.*—In this type the tubercle bacilli are transmitted by either the ovum or the spermatic fluid. Though Friedmann's (2) experiments with rabbits appear to indicate that germinal transmission from the male parent may occur, no evidence has been found in the literature to prove conclusively that this is true for man.

It might be expected, on the contrary, that an infected spermatozoon or ovum would not be healthy enough to fertilise,or to grow after fertilisation.

2. *Intra-uterine infection.*—(*a*) Tubercle bacilli circulating in the maternal blood-stream may infect the fœtus with or without simultaneous production of placental lesions.

The placenta probably acts as a partial barrier against the passage of infections from mother to fœtus ; it is doubtful whether it is ever fully protective to the fœtus when the mother suffers from acute miliary tuberculosis. Cases have been recorded, for example those of Lehmann (5) and of Schmorl and Kockel (8), in which there were tuberculous lesions in the placenta, without any definitely tuberculous lesions in the child. Schmorl and Kockel (8), however, drew attention to two important facts : first, that their examination of tuberculous placental lesions proved that the fœtal portion of the placenta had not escaped involvement ; and secondly, that small tuberculous lesions in a fœtus invaded by scanty bacilli might not be detected.

(*b*) Tuberculosis of the uterine wall may infect the liquor amnii. Contamination of the fœtus may thus occur during the inhalation and ingestion of this fluid which are believed to be normal events of intra-uterine life.

3. *Intra-partum infection.*—(*a*) When tuberculous areas have been formed in the placenta, the trauma of separation during delivery may give rise to a sudden dissemination of tubercle bacilli through both mother and child. This may be one of the reasons for the well-recognised fact that a mother suffering from active tuberculosis generally does not long survive the birth of her baby.

(*b*) During the manipulations of labour, especially when premature

respirations occur, the infant may be infected by aspiration or by ingestion of contaminated liquor amnii.

The possibility of intrapartum infection has been invoked mainly to explain those cases in which the tuberculous infant has survived birth by one month or more; for it is to be expected that the later is the infection in prenatal life, the longer will be the interval which elapses before the onset of signs and symptoms. The case of Rietschel and Geipel (7) may be instanced as an example.

It must not be forgotten, however, that the virulence of the bacillus and the resistance of the fœtal tissues are both variable factors; therefore, intra-uterine infection may in certain cases give rise to a tuberculous process which is relatively slow to advance. This is especially true if the number of invading organisms be small. For illustration of the slow progress which may follow intra-uterine tuberculous infection, attention is directed to the case of Chomé (quoted by Whitman and Greene (12)), in which the infant, though removed from its mother immediately after birth, did not die until 3 months later; and to the example recorded by Zarfl (quoted by Hess (4)) in which the infant lived to the age of 52 days, though it gave a positive Pirquet reaction on the 17th day after birth.

4. *Neonatal infection.*—The possible modes of infection during the neonatal period do not differ from those of adult life. Inhalation and ingestion of tubercle bacilli are the most important channels.

There is ample evidence in medical literature to support the contention that intra-uterine, intra-partum and neonatal tuberculous infection may occur, and it is not proposed to re-state here the references given in the papers of Weber (11), Whitman and Greene (12) and others. More recent examples of congenital and neonatal tuberculosis are furnished by the cases of Pratt (6), Earnshaw (1) and Shurlock (9).

In the case here reported, it is impossible to state definitely the route by which infection occurred, especially in view of the fact that the placenta was not examined histologically. The lesions found in the viscera of the child were very advanced; this would support the possibility of intra-uterine infection.

In favour of neonatal infection, however, is the fact that the infant was in contact with the mother for the first 25 days of his life, for it was only after this interval that the nature of her illness was suspected. It is interesting to note that three examinations of the mother's sputum for tubercle bacilli were negative.

Clinically this case emphasises the diagnostic difficulties presented by tuberculosis in infancy. Though the condition may be strongly suspected when the child's mother is proved conclusively to be the subject of active tuberculosis, it has no definite symptomatology; pallor, wasting, enlarge-

ment of the liver and spleen and irregular pyrexia are the most frequent findings. The more severe the infection, the more likely is the child to be born prematurely. In congenital cases the cutaneous tuberculin reaction is usually not positive before the end of the first month of life, though in the case recorded by Zarfl, to which reference has been made above, the test was positive on the 17th day. Grulee and Harms (3) state that a positive Pirquet reaction was obtained in a premature infant, 16 days of age, whose mother was in the tuberculosis hospital.

The prognosis of tuberculosis in infants is exceedingly grave when the series of cases considered contains only those showing unmistakable clinical and pathological signs. If a positive Pirquet reaction be accepted as definite evidence of tuberculosis, the mortality-rate must be placed at a lower figure; in a series reported by Stoeltzner (10) it was 72 per cent.

Prophylaxis dictates that the baby born to a mother suffering from active tuberculosis should be removed from her as quickly as possible, and should be isolated from other babies. There is no satisfactory treatment for the tuberculous neonate.

I wish to express my thanks to Dr. J. E. Gemmell for permission to publish this case; to Dr. John Hay and to Prof. E. E. Glynn for the clinical and pathological notes concerning the mother; and to Dr. Muriel Pickering Jones for the preparation of the microscopical sections.

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DILATATION OF THE AORTA IN CHILDREN ASSOCIATED WITH CHRONIC INTERSTITIAL NEPHRITIS.

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A case is described in which dilatation of the aorta in a boy, aged 10 years, was produced by the high blood-pressure resulting from chronic interstitial nephritis. The case has been recorded in view of the findings in a similar case recently described by Evans (1), which suggests that this condition may be commoner than is generally imagined.

A boy, aged 10½ years, was admitted to Hospital on August the 16th, 1922, owing to an attack of hæmaturia. The family history was bad, he being the second of five children, of whom three are dead. The eldest child, a male, died at six months from bronchitis. The third, the only one now alive, has had pneumonia and pleural effusion. The fourth child —a premature birth at eight months—died in eighteen days from "convulsions," while the fifth was born at seven months, and only survived two days. There have been no other pregnancies. The father (aged 33 years) is healthy, and, as far as can be ascertained, comes of a healthy stock. The mother, aged 33 years, enjoyed good health till her marriage, and though not robust now, has no ascertainable illness. Like her husband, she appears to have had healthy ancestors. Both father and mother have negative Wassermann reactions, and a careful search in both for syphilitic stigmata was negative.

Previous history.—The patient was quite healthy till the age of 6 months, when he had scarlet fever, followed by an "abscess in the throat," from which he apparently made a good recovery. Except for occasional colds he was healthy till 6 years old, when he had measles, followed immediately by broncho-pneumonia and whooping-cough. He has never been well since. At seven years he had an attack of severe pain in the side, and from the mother's story a renal calculus was evidently suspected, though no operation was done. He was circumcised soon after, and took the anæsthetic well. Some months later he began to have "turns of headache and sickness." During the last few months he has had several attacks of hæmaturia. There is no history of rheumatic fever or chorea. The mother is very sure that his general health was good till the onset of measles, and that he has been ailing ever since.

Condition on admission.—He was thin and pale, but not under-sized, and quite alert mentally. The superficial veins over the upper part of the chest were dilated on both sides, and both external jugular veins were very prominent. The veins of the left arm and forearm were dilated

and prominent, in contrast to those of the right limb, which were normal. The superior epigastric veins were dilated.

Heart.—The apex-beat was diffuse and heaving, being best felt in the nipple line in the fifth left space. There was well marked pulsation in the third left space, close to the sternum, and also in the second right space. The cardiac dulness extended on the left to the nipple line in the fifth space. The upper limit of dulness was continuous with an area of dulness occupying the two left upper spaces, extending for two inches outwards from the left margin of the sternum. There was dulness over the manubrium. On the right the dulness in the second space extended to 1 inch from the margin of the sternum; otherwise it was normal. At the apex there was a short, rough pre-systolic bruit, not accompanied by a thrill, a loud systolic bruit conducted to the axilla, and a very accentuated second sound. At the base of the heart there was a long rough systolic bruit, conducted into the carotids, and best heard over the aortic valves. It was not accompanied by a thrill. The second sound at the base was markedly accentuated, and bell-like in character. A powerful sudden diastolic shock could be felt at the aortic area, synchronous with the second sound, and feeling as if the second right space close to the sternum was being struck from behind by a hammer.

The radial artery was hard and thickened, but not tortuous. Both pulses were equal in time, though the left pulse was larger than the right. The blood-pressure in the brachial artery was 210/155 mm. Hg.

The lungs were normal, except for diminution of both air-entry and vocal resonance at the left apex in front. The percussion note at the left apex has already been described. These signs were considered to be due to compression of the lung.

The teeth were good, except for three septic stumps, and the tongue clean. No abnormality was found in the abdomen.

Nervous system normal.

The eyes were of great interest. They were examined for me by Mr. A. B. Cridland, who kindly supplied the following report:

"Right eye: quiet and free from inflammation. Cornea clear. Iris slightly muddy, with six or seven posterior synechiæ. Dots of iris pigment on anterior capsule. Lens and vitreous clear. Fundus: Scattered over the fundus generally are patches of pigment of chorioidal type, varying in size from a pin's head to a quarter disc diameter. Close to these patches of pigment, in many places there is evidence of chorioidal atrophy. At the macular region the retina shows a striate appearance, best marked between disc and macula, of the type of albuminuric retinitis. The retinal vessels are much narrowed, but not tortuous. The disc itself appears to be covered with an exudate, probably organised, so that its

edge cannot be seen. The vessels coming out through the exudate show some sheathing for a distance of two or three discs away. The general appearance of the fundus gives the impression of there having been an extensive neuro-retinitis, in which the uveal tract generally seems to have been involved.

"Left eye: Anterior part is the counterpart of that of the right eye. Vitreous clear. Fundus: the appearance of the disc in this eye is similar to that of the right, but it does not appear to have reached such an advanced stage. Above the disc are two small flat hæmorrhages, not striate. The exudate on the macular side of the disc is almost continuous with exudate at the peri-foveal region itself. Here the striation is almost that of the 'macular fan,' and is much more extensive than in the right eye. The lesions in the left eye are more recent. The patches of chorioidal pigment are scattered all over the fundus, and of the same size as in the right eye. In one place immediately above the disc there is a large irregular patch of pigment with a background of atrophy. The retinal vessels are not so narrowed as in the right eye. The inferior temporal vein is even somewhat dilated and a little tortuous, all of which goes to show that the process in the left eye is subsiding."

The urine on admission was neutral, specific gravity 1012. It contained blood, and protein 0·175 per cent. Further chemical investigation into the nature of the protein was not feasible. Microscopic examination revealed blood-cells only, no casts being seen.

The Wassermann reaction was done twice, and was completely negative on each occasion.

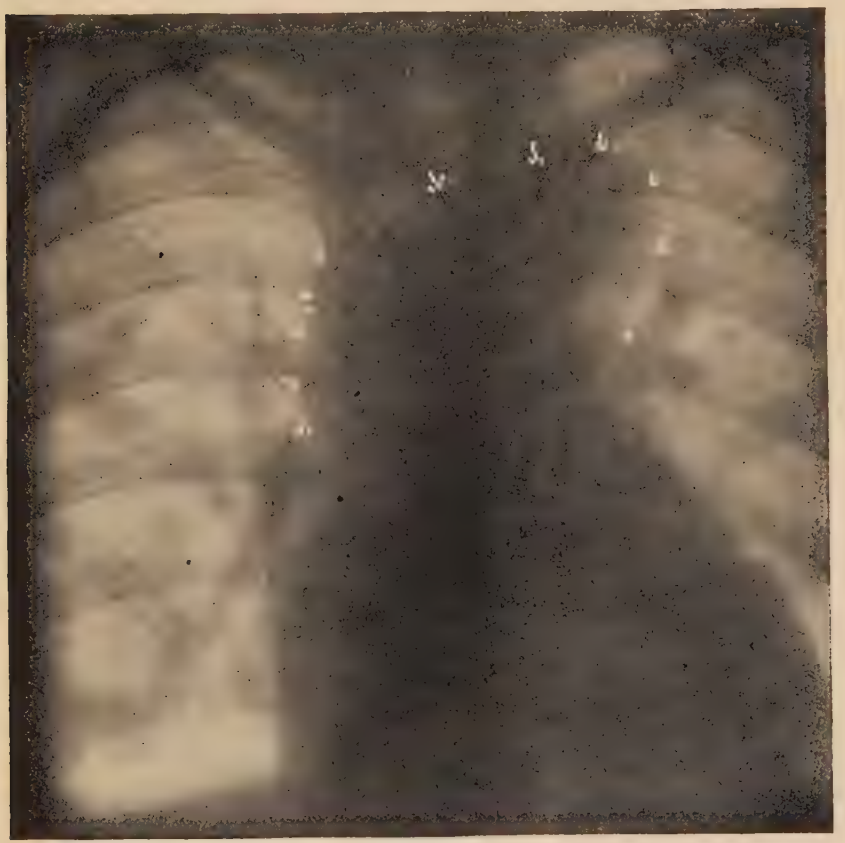
A skiagram of the chest was taken, and showed an obvious fusiform enlargement of the arch of the aorta (indicated in plate by arrows).

Further progress of the case. Protein was constantly present in the urine, in amounts varying between 0·05 and 0·3 per cent. Attacks of hæmaturia occurred at varying intervals, and were accompanied by severe pain in the left loin. At times there was just a trace of blood passed, at others nearly pure blood. At first the daily amount of urine was large, averaging 60 ounces in the 24 hours, but with the gradual onset of uræmia this dropped, until at the end there was complete suppression. The specific gravity, as already stated, was low at first, averaging 1012, but gradually rose as the amount of urine lessened. The highest figure reached was 1025.

The profuse hæmaturia associated with pain in the side gave rise to considerable anxiety and difficulty in diagnosis. An X-ray was taken, and showed a small shadow in the left renal area, suggestive of calculus. The temperature rose to 100° F. at night and fell to 97° in the morning. In spite of his general condition a laparotomy was considered justifiable,

and was performed by Mr. Deanesly. The left kidney was found to be reduced to a mere shell, but no calculus was found. The boy stood the operation well, and made a good recovery.

In the middle of September the aortic second sound was noted as losing its bell-like note, and on September the 22nd a diastolic bruit



Skiagram taken on September the 5th, 1922. The dilated aorta is marked by arrows.

over the aortic valves appeared, conducted in the usual way down the sternum. The apical sounds were unchanged. Death, which occurred on October the 4th, 1922, was due to uræmia.

Necropsy.—Heart, weight 12 oz. Great hypertrophy of the left ventricle, and to a less extent of the right ventricle. The valves appeared quite healthy to the naked eye, and there were no vegetations on them. To my great surprise the aorta was not enlarged, and the shape of the

aortic arch was quite normal and the calibre of the aorta was normal. On section there were a few yellow streaks in the intima, but no other obvious naked-eye change. The smaller vessels, *e. g.* the radial arteries, were much thickened, and showed small patches of nodular sclerosis. Kidneys: right, 2 oz. Surface finely granular; capsule adherent to cortex. On section the kidney was firm and tough; cortex appeared narrowed, and the pyramids prominent: the normal differentiation between the two was blurred, however. The cut surface contained numerous pin-point hæmorrhages. Pelvis normal. Left kidney, as has been already described, was reduced to a mere shell, with the normal kidney structure almost entirely lost, surrounding a widely dilated pelvis. The small intestine contained numerous small irregular-shaped ulcers. The other organs were normal.

Histological appearances.—The aorta showed very little abnormality. There was a slight degree of medial hypertrophy, and a section through one of the yellow streaks showed some fatty sclerosis, but neither the hypertrophy nor the sclerosis was a marked feature. The aorta was very little removed from the normal. The heart-valves were healthy. The right kidney showed chronic nephritis of advanced type. Great increase of the fibrous tissue, with diffuse small-cell infiltration. Obliterative endarteritis of marked extent, affecting especially the vasa recta. Marked loss of parenchyma, the glomeruli being much reduced in number, some remaining only as fibrous masses, while even in the best there was obvious thickening of Bowman's capsule. The tubules were reduced in number, and in many places atrophied. There was practically no evidence of attempt at regeneration in the kidney.

Discussion.—There can be no doubt that this boy suffered from chronic interstitial nephritis. The evidence is, to my mind, convincing that during life he also had a fusiform dilatation of the arch of the aorta, of sufficient extent to cause signs of pressure on the great veins. The evidence consists of (1) the area of dulness in the two upper left intercostal spaces, extending across the manubrium to 1 inch beyond the right border of the sternum in the second interspace. (2) The heavy diastolic shock palpable in the second right space. (3) The signs of venous pressure. (4) The X-ray picture, which clearly shows the enlarged aorta. (5) The sudden production of an aortic regurgitation on September the 22nd, the aortic valves being found healthy post-mortem, which was evidently due to stretching of the aortic rim.

(1) The first point to be considered is the nature of the aortic dilatation. It does not belong to any of the groups into which aneurysm in children is usually divided, viz. syphilitic, infective or embolic, congenital malformation, arterio-sclerotic, since these all have a distinctive post-

mortem or histological appearance. Here, on the contrary, the naked-eye appearance of the aorta, and of its relations, was normal, and the histological examination revealed only a very slight departure from the normal structure. The discrepancy between the clinical and the post-mortem state of the aorta is striking, and it is evident that there is no sufficient explanation of the dilatation to be found in the aorta itself. The slight changes occurring there are to be regarded as secondary to the dilatation. I regard the dilatation of the aorta, present here during life, as a direct mechanical consequence of the increase in blood-pressure due to the chronic interstitial nephritis. When first seen the blood-pressure was very high (210/155 mm. Hg.), and the pulse-pressure was 55 mm. Hg. If we are to date the onset of the nephritis from the attack of measles, the aorta will have been subjected to this pressure for about four years. The strain on the aorta in a case like this, lying as it did between a hypertrophied left ventricle and a greatly increased peripheral resistance, and acting as a buffer between the two, must have been great. Normally, of course, the aorta, not being a rigid tube, at the end of diastole is stretched by the systolic output of blood from the left ventricle, but its perfect elastic recoil enables it to force this excess of blood on to the peripheral arteries, allowing it to return to its normal size before the next systole. Here, however, too much was being asked of its elastic recoil, for the lowest pressure it had to deal with—the diastolic—was half as much again as the highest it would, at the age of 10 years, be normally subjected to at temporary intervals (*i. e.* the systolic). The increase in peripheral resistance due to the sclerosis of the peripheral arteries was more than the aorta could overcome before the next systole; the diastolic pressure in the aorta was consequently increased, never allowing the elastic recoil of the aorta to return it to its proper size. In diastole, therefore, the aorta suffered from the state of the peripheral arteries. In systole it had to bear the strain thrown on it by the hypertrophy of the left ventricle, which was forcing blood into an aorta already unduly stretched by the high diastolic pressure. The systolic pressure rose to 210 mm. Hg.—roughly double the normal amount for a boy of his age. Under the strain of these two pressures, and never being able to return to its normal size, presumably the aorta underwent a permanent stretching, which was ultimately sufficient to produce clinically the signs of aneurysm. The slight hypertrophy of the media found post-mortem was presumably an attempt on the part of the muscle to assist the elastic tissue in its task of restoring the aorta to a normal calibre, and it was the contraction of this muscle in rigor mortis that made the aorta appear of normal size post-mortem. The arch of the aorta probably dilated first, and then the process spread up and down. It is interesting to note

that one can accurately name the date on which this widening reached the aortic rim, causing incompetency of the aortic valves with the production of the typical murmur of aortic regurgitation.

(2) This condition is, of course, not a common complication of the chronic interstitial nephritis of childhood, though I believe that in a minor degree it will often be found, if looked for. I have at present a case in a boy, aged 14 years, with a blood-pressure of 190/130 mm. Hg. in which, though there are no clinical signs of dilatation, a fluoroscopic examination shows an abnormal degree of pulsation in the aorta. The renal condition, however, has only been present for three years, so that it is probably too early yet for the aorta to show a permanent dilatation. He is being carefully watched from this point of view.

Of great interest in this connection is a case described by Evans (1) (Case II), in a boy, aged 14 years. Seven years before death, his blood-pressure had been found to be 195/170 mm. Hg. and there was evidence of nephritis. There was then an interval of six years, after which the eyesight began to fail. When examined, the state of the cardio-vascular system was as follows: "Marked cardiac hypertrophy; the radial artery was thickened. There was such marked visible and palpable pulsation in the second right intercostal space that aneurysm of the aorta was suspected. X-ray examination showed a dilated aorta. B.-P. 260 mm. Hg. systolic, 200 mm. Hg. diastolic." He died from cerebral hæmorrhage. The post-mortem findings were that the "heart showed marked hypertrophy of the left ventricle; muscle, endocardium and pericardium normal. The aorta showed only slight evidence of sclerosis. In an adult it would have passed as normal in this respect; its media was much thickened, as was that of the other vessels." No mention is made of the size of the aorta, but presumably, as in my case, the aorta had shrunk from contraction of the media in rigor mortis, giving it a normal appearance as to size. This case appears to be on all fours with mine, and the family histories of the two cases tally in a way that may be of significance. They were both bad. In Evans's case the patient was the seventh of nine children, and the mother had had four miscarriages before his birth. The other children were all alive and healthy, but he certainly came towards the end of a long series of pregnancies. In my case there were only five pregnancies, but of these, two ended in miscarriage, and of the remaining three children, one had died at six months. The extent to which a young aorta can withstand the high pressures occurring in this disease will naturally depend to a certain extent on what one may term the quality of its material, and it is possible that the two histories may be taken to indicate a certain deficiency in this respect. The Wassermann reactions were negative in both cases,

and in mine the reaction in the parents was also negative, so that syphilis cannot be accounted a factor in the production of the aortic dilatation.

(3) Certain observations made by Smith and Kilgore (2) on dilatation of the arch of the aorta in chronic nephritis with hypertension are of importance here. They investigated the size of the aorta by X-ray examinations, taken with parallel rays at a distance of 7 feet, as a routine examination in a series of cases. They state that the diameter of the normal aorta lies within limits of 4·5 cm. to 5·5 cm., and that a diameter of 6 cm. is never exceeded without there being some pathological factor present. In their cases showing enlargement, after ruling out those due to syphilis or to age, there remained some in which cardiac enlargement or hypertension was present. The latter group concerns us here. There were fourteen cases of chronic nephritis, with systolic blood-pressures ranging from 185 to 270 mm. Hg. The ages of the patients varied between 29 and 54, the average being 43. They all had enlargement of the transverse diameter of the heart, and all but three had aortas with a diameter of 6 cm. or more, ranging up to 9 cm. The age of the patient would appear to have some relation to the extent of the dilatation, as in the cases with arches measuring 6 to 7 cm. the average age was 45·5 years, and in those measuring 7 to 9 cm. it was 40·4 years. The degree of hypertension bore no constant relation to the size of the arch, but possibly the duration of the hypertension, which cannot be estimated accurately, was the more important factor. They conclude that dilatation of the arch of the aorta in chronic nephritis with hypertension is of frequent occurrence, as in their series there were no aortas below the upper limit of normal diameter. This dilatation may be quite marked, especially in the younger patients whose aortas have not been stiffened by age.

These observations are of great interest, and go to confirm my interpretation of the aortic dilatation in the case recorded.

Conclusions.—General dilatation of the aortic arch is a possible sequel of chronic interstitial nephritis in children. It may be of sufficient extent to produce the clinical signs of aneurysm, and is capable of causing aortic regurgitation. In both the cases referred to, the aorta showed very little departure from the normal structure, indicating that the dilatation is probably a mechanical consequence of the hypertension. To a minor degree the condition is probably a commoner one than is usually supposed.

References.

(1) Evans.—'Quart. Journ. Med.,' 1922, xvi, p. 33.
(2) Smith and Kilgore.—'Am. Journ. Med. Sci.,' 1915, cxlix, p. 503.

TYPHOID FEVER COMPLICATED BY PURPURA HÆMORRHAGICA.

By Dr. Angelica Panayotatou,
Alexandria.

The rarity of purpura hæmorrhagica in typhoid fever and the gravity of the prognosis in cases with this complication have induced me to record the following case :

The patient was a girl, aged 4 years. The parents were young and in good health. She was admitted to the Greek Hospital of Alexandria on August the 4th, 1923, under the care of Dr. Tsamis for continued fever (102·4°–104° F.) of eight days' duration, accompanied by slight somnolence, but not a typical typhoid state.

Condition on admission.—Two to three loose yellow stools daily. There were no rose spots. The tongue was dry and coated, and surrounded by a red border at the tip and edges. The abdomen was slightly distended and tender, especially in the right iliac fossa. The splenic dulness was increased, and the spleen was palpable. The liver was a little increased in size. No signs were found in the chest, except a few rhonchi, especially at the bases of the lungs. The patient did not present any nuchal rigidity and the reflexes were normal. Temperature 103·6°, pulse 106, not dicrotic. The urine did not contain any albumin. Widal's reaction on the eleventh day of disease was intensely positive for typhoid, and negative for paratyphoid A and B. A blood-culture was not made.

August the 5th : Morning temperature 99·6°, evening temperature 102·2°.

August the 6th : Morning temperature 103·2°, evening temperature 104°.

August the 7th : Morning temperature 101·8°, evening temperature 104·6°. The general condition grew worse daily and a definite typhoid state supervened. The child kept her eyes closed and was constantly groaning.

August the 8th : Morning temperature 100·6°, evening temperature 102·6°.

August the 9th : Morning temperature 102·2°, evening temperature 103·2°.

August the 10th : Morning temperature 101·4°, evening temperature 102·2°. Some hæmorrhagic spots of ecchymotic appearance and dark red colour were seen on the thorax. The spots were about the size of a pea, and were slightly raised above the surface and were quite painless. No rose spots were seen.

August the 11th: Morning temperature 99·6°, evening temperature 102·4°. The ecchymoses were more numerous and were present also on the face and limbs. Some of them were of the size of a 50-centime piece. The general condition was very grave, the weakness and prostration being extreme. In the evening some hæmorrhages from the mucous membranes occurred in the form of epistaxis and melæna.

Blood-count: Red corpuscles, 3,200,000; leucocytes, 15,600; polymorphonuclears, 84 per cent.; mononuclears, 12 per cent.; lymphocytes, 4 per cent.

August the 12th: Morning temperature 101·4°, evening temperature 102·2°. The ecchymoses were more numerous and larger in size, and there was profuse hæmorrhage from the ears. Hæmoglobin 40 per cent. Colour index 0·64. Coagulation time 12 minutes, bleeding time 5 minutes. Morning temperature 98·8°, evening temperature 104°.

In addition to the ordinary treatment for typhoid fever which was adopted on admission to hospital, Dr. Tsamis and his assistant, Dr. Marcou, employed all the most recent therapeutic methods, such as injections of milk 1–2 c.c., solution of calcium chloride by mouth, intramuscular injection of horse-serum, 10 c.c., injection of the mother's blood, 8 c.c., etc. Death took place on August the 15th, the eighteenth day of disease. In addition to the purpura the interesting feature in this case was the leucocytosis of 15,600 accompanying the coagulation in place of the leucopenia characteristic of typhoid fever.

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, March the 23rd, 1923.

The President, Dr. Eric Pritchard, *in the Chair.*

Raynaud's Syndrome in a Non-Syphilitic Infant with a Remarkable Family History.—Dr. F. Parkes Weber (*vide* British Journal of Children's Diseases, 1923, xx, p. 25).

Case of Patent Ductus Arteriosus and Mitral Disease.—Dr. G. M. Kendall showed a girl, aged 8 years, who, apart from scarlet fever at the age of 18 months and measles at 5 years, had had no serious illnesses. The present illness had lasted for four months. She had been languid and short of breath, and had lost her appetite. Pains had been complained of

in the arms and legs and in the left side. She had had a sore throat about three months ago. The heart was moderately enlarged to the left, but not to the right; the upper limit of cardiac dulness extended up to the first interspace close to the sternum. The impulse was forcible. There was a long blowing and faintly musical systolic murmur at the apex which was conducted towards the axilla. At the base there was a well-marked thrill and murmur, and on these signs a diagnosis of patent ductus arteriosus was based. Both the thrill and murmur were most noticeable in the first and second space near the left border of the sternum. The thrill was felt faintly in the third space also, but not elsewhere. It appeared to be intensified at the first and second sounds and to die away during the long pause. The murmur was best described as "roaring." It was continuous, and was intensified at two points, which were synchronous with the first and second sounds. Lower down in the third and fourth spaces near the sternal edge what appeared to be the diastolic component of this murmur was heard, but here it was very superficial and rather like an exocardial sound. There was no œdema. The liver edge was felt two inches below the right costal margin; there were no rheumatic nodules. The temperature occasionally rose to 99° F. X rays showed the right heart enlarged to the left and not to the right; the outline of the aortic arch was obscured, possibly by a dilated pulmonary artery. The blood contained 4,750,000 red cells per c.mm. The condition appeared to be one of patent ductus arteriosus combined with mitral disease of rheumatic origin.

Two Cases of Duodenal Obstruction in Infants treated by Operation.—Dr. R. C. Jewesbury and Mr. Max Page.—Case 1: Female child, born at full term, birth weight 9½ lb. Breast-fed since birth, but had forcibly vomited after nearly every feed; the vomit was green in colour. Bowels constipated. On the eighth day the child weighed 8 lb. and was obviously wasting. The stomach was dilated and no peristalsis was visible. The stomach was washed out and the breast-feeds were reduced in number, but the vomiting continued. By the twelfth day the weight had fallen to 6 lb. 12 oz., and the child was admitted to hospital. The stomach was washed out, bismuth solution (3 oz.) was given through a tube and a skiagram taken. This showed a patent pylorus and a duodenal obstruction which appeared to be almost complete at the junction of the second and third parts. An operation was performed by Mr. Page when the child was 12 days old. Saline solution was injected subcutaneously before and after the operation. The feeds after the operation consisted of very small amounts of diluted breast-milk, which was gradually strengthened and increased in amount. Five days after the operation the bowels began to act and the motions were normal. There was occasional slight vomiting for a time after the operation, but eventually the child got back to the breast and was now doing exceedingly well. At 2 months the weight was 8 lb. 4 oz.

Case 2: Female child, aged 5 days, full-term birth, weight 7½ lb., breast-fed. History of forcible vomiting since birth; the vomiting was bile-stained and contained some mucus; the meconium was bile-stained. Nothing abnormal could be felt in the abdomen and there was no visible peristalsis. X-ray examination after a bismuth meal given by tube showed the stomach much dilated and an almost complete obstruction at the duodeno-jejunal flexure. Operation was performed by Mr. Page when the baby was 5 days old. After operation the child was fed in a similar manner to the former case. She did well for a time and gained weight, but after some days bile-

stained vomiting returned and the condition appeared to have recurred. She was still in hospital; the stomach remained dilated and was being washed out daily; the wash-out contained bile and mucus. The child was not in a fit state to stand a second laparotomy.

Mr. Max Page said that in the first case, on opening the abdomen the stomach was found to be obviously dilated, as were also the second and third parts of the duodenum. The small bowel was collapsed. The obstruction was clearly at the duodenal flexure, and appeared to be due to turning over from left to right of the proximal part of the duodenum. The jejunum passed through a segment of mesentery of the small intestine half an inch from the duodeno-jejunal flexure. The obstruction was relieved by freeing the first two or three inches of the jejunum from adhesions which bound them down to the peritoneum or the posterior abdominal wall and to the upper surface of the small bowel. The adhesions were non-vascular and did not require ligaturing.

In the second case, the first, second and third parts of the duodenum were dilated. The relationship of the first part of the jejunum to the mesentery was apparently normal, but there was the same tying down of the first part of the jejunum over the right side. The peritoneal attachments of the large bowel were mobile.

Mr. Page said that in these cases of duodenal obstruction operation was justified when the condition was promptly diagnosed by X rays, because if even in only a small proportion of the cases it should prove possible to relieve the obstruction by dividing adhesions, the procedure was well worth attempting. According to the literature, most of the cases in which operation had been tried were those of stenosis of the duodenum; in such cases the performance of an anastomosis was necessary, and in the first week of life such a proceeding was seldom successful.

Case for Diagnosis.—Dr. R. C. Jewesbury showed a girl, aged $3\frac{1}{2}$ years, who had been quite well until a year ago, when she had a severe attack of broncho-pneumonia, since when she had never walked. Six months ago a lump was noticed in front of the left hip, and at the same time swelling occurred in the wrists and elbows. She had also had irregular fever for the past six months. The joints were not painful except when moved much.

Condition on examination.—She was very small for her age. Weight 21 lb. 2 oz. She was very thin and weak, the skin was dry and showed a light brown diffuse pigmentation. There was an excess of hair all over the body, especially on the forehead and back. The conjunctivæ were pale. Intelligence normal. Both wrist-joints were distended with fluid, movements were limited, but not painful unless forced. Both elbow-joints were somewhat swollen, and full extension was not possible. There was also a little fluid in the shoulder-joints. The small joints of the fingers were slightly swollen; the toes and ankles were not affected. The right hip was ankylosed (bony ankylosis), and the thigh was flexed and much abducted. A hard, bony outgrowth was felt in the upper third of the femur and above that was a mass of enlarged glands extending into the right groin. The glands were enlarged in both axillæ and in the neck. The teeth were carious and septic. Heart and lungs normal. The urine was normal. Blood showed a leucocytosis of 22,000 of the polymorphonuclear type. Blood-culture negative. Fluid withdrawn from a wrist-joint was sterile and contained no cells. Wassermann reaction negative. A gland removed from the axilla

showed a general lymphatic hyperplasia, but no evidence of tuberculosis. The temperature was irregular, ranging between normal and 102° F. X-ray examination showed a synovitis with practically no bony changes in the wrists, but in the right hip it showed a partial bony ankylosis with a large bony outgrowth involving the joint and the upper third of the right femur.

Case of Tay-Sachs' Disease.—Dr. L. Mandel showed a case in a female infant, aged 20 months, with typical condition of the maculæ. The particular interest of the case was that so far as could be traced there was no history of Jewish antecedents.

Enlarged Liver with Persistent Acetonuria and Diaceturia.—Dr. C. Worster-Drought.—The patient was a girl, aged 10 years. From the age of 1 to 4 years she had suffered from fits, and between the ages of 3 and 5 from recurrent vomiting strongly suggestive of cyclical vomiting. The liver was enlarged at this time. She did not walk until the age of 4 years and 3 months. Since then her general health had been fairly good, and from the age of 5 she had grown steadily. Present condition: Very bright and intelligent. Physically rather undersized. Breath had strong acetone odour. Liver edge was felt 3 inches below costal margin, edge being firm but not irregular. Spleen not palpable. Wassermann reaction negative. Acetone and diacetic acid both present in urine. No albumin or sugar. Several hepatic efficiency tests had been tried, all yielding negative results. Dr. Worster-Drought said that the association of hepatic enlargement with the continued presence of acetone or diacetic acid in the urine without glycosuria was unusual. Syphilis was excluded by negative results in the parents, patient and her sister.

SECTION OF DERMATOLOGY.

April the 19th, 1923.

Pityriasis Lichenoides Chronica.—Dr. Haldin Davis showed a boy, aged 12 years, with this condition, which was a variety of para-psoriasis. The lesions were minute scaly papules, scattered over the trunk and limbs, but absent from the face, hands and feet. Many ointments had been tried, but the lesions had hitherto been resistant to every treatment.

Congenital Onychogryphosis.—Dr. J. H. Sequeira.—The patient was a child, aged 2 years, born at the seventh month, and the nails were not developed at birth. When they did develop they grew in a hypertrophic form, resembling onychogryphosis. All the nails of both hands and feet were affected. The hypertrophied nails were strong, brownish in colour, and projecting upwards from the nail-beds for from $\frac{1}{4}$ to $\frac{1}{3}$ in. There was no similar condition in the family.

In the subsequent discussion Dr. Graham Little said he had had an exactly similar case in a somewhat younger child in whom the nail condition was not noticed at birth. The nails were cut with clippers from time to time, in order to remove the local discomfort.

The President (Dr. H. G. Adamson) recommended evulsion of the nails, to be followed by scraping of the roots and nail-beds. He thought it would

be necessary to destroy the nail-growth entirely; the child would be less incapable with no nails than with those which it had.

Unusual Localisation of Ichthyosis.—Dr. H. C. Semon showed a child, aged 5 years, who had been born with ichthyosis of the lateral aspects of the neck, flanks and part of the back. The condition had persisted and led occasionally to friction and drying effects in these areas. There was no familial history of a similar condition. The case seemed to belong to that variety of bilateral symmetrical type which found a rare but highly characteristic expression in keratosis palmaris et plantaris hereditaria. Such cases seemed to supply rather strong evidence against the theory of thyroidal causation or influence in production. A cretin with ichthyosis had yet to be recorded.

May the 17th, 1923.

Outbreak of Alopecia.—Dr. H. C. Semon showed two cases from an alleged outbreak of alopecia which he had recently investigated in an orphanage. The first child, aged 8 years, had been an inmate of the orphanage 14 months, and entered it with typical alopecia areata. On April the 27th it was noticed that she had a bald area in the right frontal region. On May the 3rd the second child was found to have a bald area in the left frontal region, *not* typical alopecia areata. Most of the heads in the institution were examined, and 14 showed a similar condition of atypical alopecia. The patches were not round, but of angular outline and not completely denuded of hair, and showed no typical comma-shaped stumps. The condition was therefore an epidemic of unknown ætiology or an artefact.

In the subsequent discussion Dr. Sequeira stated that he thought these were most likely cases of imitation artefact.

Dr. Haldin Davis said that he had seen an almost exactly similar epidemic in a home for children in 1914, and several years afterwards he concluded it must be imitation artefact.

Case of Acne Scrofulosorum.—Dr. A. M. H. Gray showed a girl, aged 6 years, who had had the eruption for two years, associated with bilateral swelling of the wrists, knees and ankles. It consisted of indolent follicular pustules of the acne scrofulosorum type, which occurred chiefly on the extensor aspects of the limbs, a few scattered lesions on the back, and very marked lesions on both cheeks. On the extensor aspects of the limbs there were larger lesions, varying in size from that of a threepenny piece to one 6 in. in diameter on the leg. She also exhibited a curious condition of the scalp, in which there was apparently nothing very active, but which closely resembled folliculitis decalvans. The joints were still very swollen. There were signs of tuberculosis at the left apex. She gave a negative Wassermann but a strongly positive Pirquet reaction to both human and bovine tuberculin. Sections of the acne scrofulosorum lesions showed a granuloma of the tuberculous type, but tubercle bacilli could not be found. Dr. Gray regarded the lesions on the face as an example of Barthélemy's "acnitis." The scalp condition was apparently of the same nature as the rest of the eruption, and it so closely resembled "folliculitis decalvans" as to raise the question as to whether the later condition might not possess a possible tuberculous ætiology.

June the 21st, 1923.

Case for Diagnosis; ? Papulonecrotic Tuberculides.—Dr. E. G. Graham Little showed a girl, aged 16 years, over-fat, with a chilblain circulation and an unhealthy colour. He had suggested as a tentative diagnosis papulonecrotic tuberculide of an acneiform type. The history was very curious. She had had four attacks of measles in six years, the last attack being in 1912. Twice in 1915 and 1916 she had an eruption diagnosed as scarlet-fever, and she had had an attack of jaundice eighteen months ago. The present eruption appeared about a fortnight ago; it came on fairly acutely, but she seemed to have similar attacks previously. The eruption consisted principally of hard, shotty papules with a minute central pustule. It was thickly distributed on the forearms, less thickly on the dorsum of the hands. There was no itching. On both upper arms, just below the shoulder, there were some areas of grouped follicular patches, which were almost certainly examples of lichen scrofulosorum. Up to two years ago the patient had been very thin and anæmic, and had become very fat only within the last few months. The plumpness was probably the *faux embonpoint* which Pringle had described as typically tuberculous. There were no other symptoms of tuberculosis at the present time.

Case for Diagnosis.—Dr. J. E. M. Wigley showed a girl, aged 12 years, who was said to have had a recurrent blister eruption since she was vaccinated at six weeks of age. The blisters and pustules were situated chiefly on all four extremities and there were a few on the trunk. The eruption appeared in the spring, persisted during the summer and disappeared in the winter. In 1923 for the first time pustules had appeared; previously there had been only blisters. Itching was not very severe, but was most marked at night. Cultures from the blisters were sterile, but a pure culture of a long streptococcus was obtained from the pustules. The Wasserman reaction was negative. The case was probably one of dermatitis herpetiformis.

Case of Lichen Spinulosus.—Dr. J. E. M. Wigley also showed a child, aged 4½ years, with a local condition which seemed to be lichen spinulosus associated with a mild degree of xerodermia and some evidence of early achondroplasia. There was marked lordosis and shortening of the upper portions of the limbs. The Wassermann reaction was negative.

SECTION OF LARYNGOLOGY.

May the 4th, 1923.

Fibroma of the Nose.—Dr. Leslie Powell showed a boy, aged 13 years, who had suffered for three months from nasal obstruction, causing mouth-breathing and snoring, also on one occasion slight bleeding. Transillumination showed both antra clear. A tumour was seen through the right nostril, attached posteriorly to the floor and adjacent parts of the choana. Removal of the growth in March, 1923, was followed by free hæmorrhage, which soon ceased. On examination the growth was found to be a pure fibroma. On March the 29th a recurrence on the inner wall was removed, and a further recurrence, which was found to be attached to the ethmoid region, was removed later.

Foreign Body Removed from the Trachea of a Child.—Dr. H. Smurthwaite.—A female child, aged 6 months, swallowed a little round flat whistle which became detached from her rubber doll, but no notice was taken at the time as she seemed none the worse. Some four weeks later her breathing became embarrassed, and on X-ray examination a foreign body was seen at a level with the entrance of the left bronchus. The smallest-sized bronchoscope was inserted and the whistle could be plainly seen, but could not be extracted with the forceps at hand because they obstructed the view. An improvised instrument was then made and the foreign body successfully removed.

SECTION OF NEUROLOGY.

May the 10th, 1923.

Case of Progressive Double Athetosis.—Dr. A. Feiling.—The patient, a boy, aged 9 years, was normal at birth and continued so until August, 1919, when, as the result of a street accident, his right foot was amputated. After recovery, and when he began to use crutches, involuntary movements were noticed in both arms. Later these movements affected the legs as well. Three years ago dribbling from the mouth began, shortly followed by a progressive loss of speech. Until about 18 months ago he was able to swallow well, but during the last year spasmodic movements of the jaws had seriously interfered with feeding. The mental faculties had not suffered. Past history: measles, chickenpox and erysipelas. Family history: no history of any nervous or mental disease. Three other children alive and well; one child died of pneumonia; one miscarriage three months after marriage. On examination he was seen to be undersized. He was now quite unable to speak, but could indicate by signs what he meant, and was perfectly intelligent, though the mental state was retarded for his years. Pupil and optic discs normal. No paralysis of ocular muscles or of face. Constant spasm of jaws leading to marked grinding of the teeth and interfering with feeding and mastication. The tongue now could hardly be protruded at all, and when it was, was directed to the left. Swallowing very difficult and food stuck in the throat. The arms, the left especially, were the seat of involuntary movements. These took place at all the joints but were most marked at the shoulders. They more closely resembled the type of athetosis than anything else. No actual paralysis. Not much alteration in muscular tone but some hypertonus was perhaps present. Arm-jerks present. Similar movements affected the legs, but the right was the more affected. The knee-jerks and left ankle-jerk were active. Plantar response somewhat doubtful, probably flexor. No loss of sensation. He was unable to stand even with assistance and with a peg leg, but could sit up unaided. One year ago the Wassermann reaction in the blood was feebly positive. The cerebrospinal fluid was quite normal. The Wassermann reaction in the mother's blood was negative. He was treated a year ago with anti-syphilitic remedies, mercury and iodide and intramuscular injections of glucarsenol. Some improvement took place, but recently there had been a slow deterioration, especially in the power of swallowing.

Case of Right Fronto-parietal Tumour; Cracked-pot Percussion Note over Right Frontal Bone; Left Palmar Reflex.—Dr. G. Riddoch

and Dr. W. Russell Brown.—The patient, a Hebrew boy, aged 8 years, left-handed and a twin, was noticed 6 months ago to be weak in the left hand, which had become progressively weaker. He had complained of headaches beginning in the right temporal region for 4 months, and had vomited every few days for the same period. His face was noticed to be "on one side" 2 months ago; and there was a history of stammering and some indefinite visual impairment. On examination on February the 20th, 1923, there was a visible boss on the skull in the right temporal region divided by the right fronto-parietal surface. On percussion a cracked-pot sound could be elicited over the right frontal bone, while the left yielded a "boxy" note. The fundi showed blurring of the edges of both discs with one dioptre of swelling in the right. There was a left hemiparesis, the weakness affecting the facial movements most, the arm to a less extent and the leg only slightly. Sensation was normal. A fortnight later small clonic movements were observed in his left face, arm and right leg. Palmar reflex. It was noticeable that objects placed in the left hand were the more strongly clenched the more one attempted to pull them away. This reaction could still be obtained, and was evoked especially by moving contact from the flexor surface of the fingers, and especially of the first finger and thumb. The reaction was entirely involuntary, for the patient obviously made strong efforts to relax his grasp. He was usually unable to extend his fingers, but the reflex could be well evoked even when spasm of the fingers was largely eliminated by passive flexion of the wrist. At the present time there was some loss of postural sensibility in the fingers of his left hand. Tactile discrimination, localisation and sensibility were also defective in the left upper limb. There was now some secondary atrophy of both optic discs.

SECTION OF ORTHOPÆDICS.

April the 17th, 1923.

Case of Renal Dwarfism Shown After Operation for Genu Valgum.—Mr. P. B. Roth showed a girl, aged 13 years, very small for her age, thin and sallow, with extreme genu valgum (10 in. between malleoli), enlargement of internal condyles, and characteristic urine (pale, specific gravity 1005, albumin one-half on boiling and standing). Skiagram: internal condyles enlarged, spongy-looking transparent bone, and patches here and there in diaphysis where bone appeared almost missing. Lower ends of ulnæ similar. The urea concentration test in June, 1922, and January, 1923, showed that the percentage of urea was 0·9 and 0·8 respectively in the urine and 0·091 and 0·124 in the blood; the urea concentration factor was thus 10 and 6·45 respectively. In other words, her kidneys in January, 1923, were doing only one-tenth of the urea concentrating work they should be doing, and the condition had become worse in spite of rest in bed. As the patient was completely crippled, however, double supra-condylar osteotomy was performed in February, 1923, under gas and oxygen and nothing untoward resulted.

Case of Ocular Torticollis.—Mr. P. B. Roth.—The patient was a girl, aged 8 years, with a history of having had wry-neck since birth. On examination it was found that though the patient carried her head laterally flexed to the right, there was no shortening of the right sterno-mastoid

muscle, and that she was wearing badly centred glasses. Mr. Hine, who examined her, reported that it was a case of true ocular torticollis due to a left convergent strabismus. He had corrected these by suitable glasses, and the patient was being trained to keep her head straight and was improving rapidly.

Case of Dislocation of Patella Outwards, Leading to Osteomyelitis of Femur.—Mr. H. A. T. Fairbank showed a boy, aged 6 years, who had been operated on when 7 weeks old for "cellulitis" of the left leg. He was first seen in April, 1922, with marked genu valgum and outward dislocation of patella, there being a thick scar on the outer side adherent to the lower third of the femur. April the 27th, 1922: excision of scar. May the 24th, 1922: osteotomy on left femur for correction of knock-knee. Position of patella much improved but later it was found to be going outwards again, with a strong tendency to relapse to a condition of genu valgum. X rays showed slight thickening of lower third of femur with epiphysial line apparently normal. Patella not ossified. The genu valgum and tendency to relapse were regarded as due to the scar rather than to previous drainage to the outer part of the epiphysial line.

SECTION OF OTOLOGY.

May the 18th, 1923.

Otitic Pterygo-maxillary Abscess Induced by Thrombo-phlebitis of the Jugular Bulb.—Dr. Dan McKenzie.—A boy, aged 8 years, was admitted to hospital with chronic suppuration of the left middle ear and a temperature of 102° F. Immediate radical mastoid. No relief to temperature. Two days later wound re-opened, and a small drop of pus on the floor of the external meatus was found to lead to an abscess in front of the bony meatus. This was opened and drained, and a counter-opening made into the pharynx. Lateral sinus explored; no clot found. No relief to temperature. Two days later internal jugular vein exposed and resected. Thrombosed down to lower border of thyroid cartilage. Vein cleared of clot by curette as high as jugular bulb. Next day signs of cavernous sinus thrombosis followed by death two days later.

The specimen exhibited showed erosion of outer wall of jugular bulb leading to site of abscess in the pterygo-maxillary fossa. No evidence of bone disease adjacent to the abscess.

This was evidently a case of thrombosis of the jugular bulb, which had extended down the vein into the neck, but not upwards into the lateral sinus. The thrombosis in the bulb had broken down, and the pus had made its way through the wall of the bulb into the pterygo-maxillary fossa, tracking down towards the pharynx, and back over the floor of the external meatus. On a study of the literature of pterygo-maxillary abscess in 1915, Dr. McKenzie had found only three cases in which the abscess was (doubtfully) traceable to thrombosis in the bulb.

Left Temporo-sphenoidal Abscess: Amnesia for Names of Objects.—Mr. Sydney Scott.—A girl, aged 10 years, was said to have had deafness in the left ear for fully 2 years. She had been treated for otorrhœa until 9 months ago, when the discharge ceased after removal of tonsils and

adenoids. There had been no other symptoms until about a month before admission. She attended the out-patient department complaining of pain in the left ear and some otorrhœa, but her condition was not regarded as serious until she had some kind of convulsion, followed by another two days later, and was then admitted to hospital. The convulsions were said to have involved the right side of the face and right upper and lower extremities.

Condition on admission: Conscious; no hemiplegia; temperature 101·6° F., pulse 96; tongue thickly furred. Some pus and *débris* in left external auditory meatus. No mastoid signs, but slight tenderness on left side. The child said she had no headache, but she liked to be alone. When her memory was tested for names of objects she soon made repeated mistakes, became confused, and said she "could not be bothered to think." As it seemed probable that the child had localised encephalitis of the left temporo-sphenoidal lobe Mr. Scott decided to open the mastoid at once and explore the brain. The antrum and aditus contained cholesteatoma and pus, and there was an extradural abscess in the middle cranial fossa. No pulsation of the exposed dura could be felt. When the dura was incised unmistakable adhesions to the arachnoid and pia mater were found, extending to the lateral surface of the temporo-sphenoidal lobe. No pus escaped through the dura, though the incision was carried into the cortex, nor did the brain tissue protrude.

The general condition did not become satisfactory, though neurological examination revealed no fresh signs; she was allowed up and walked in the ward. She seemed peevish and irritable and behaved like a spoilt child. In the third week she vomited unexpectedly three or four times. The "name amnesia" persisted, and it seemed justifiable to make a more determined exploration of the brain. Mr. Scott turned down a flap of the scalp and again exposed the dura mater. On making an incision through the adherent membranes into the brain he at once found the abscess. It was drained with rubber tubes, and the child's condition, temperament and memory rapidly improved.

It was now one and a quarter years since the operation, and the child was now particularly bright and well. Last summer she had had nine convulsions after a minor plastic operation, and terrifying dreams frequently disturbed her. No further operation on the brain had been necessary. The operation cavity closed down and the meatus became stenosed. At present a post-auricular sinus persisted. Attempts to re-establish a meatus and to close the sinus had been deferred until the child's condition justified the procedure.

The observation of amnesia for names of objects, the occurrence of vomiting and absence of headache were the leading clinical features of the case. The presence of the extra-dural abscess and of adhesions between the dura and the brain indicated the path of infection. Recovery was doubtless greatly favoured by the dural adhesions.

Cerebellar Abscess Five Weeks After Onset of Acute Otitis Media.—Mr. Sydney Scott—A boy, aged 7 years, was admitted with otorrhœa and deafness on the right side. During the previous week drowsiness had been noticed and he had vomited a few times. Condition on admission: Temperature 98° F.; pulse 130; nystagmus to the right. Deviation to the right when pointing with the right upper extremity. No asynergia, no dysdiadokokinesis, and finger-to-nose test was correct. Reflexes normal, except doubtful plantar response.

Schwartze operation: very small extra-dural abscess mesial side of sigmoid sinus. Exploration of cerebellum through this area and about ¼ oz. of pus evacuated. Tube drainage.

The boy was still in hospital and appeared to be progressing favourably.

Société de Pédiatrie, Paris.

January the 16th, 1923.

Iodine Eruption in a Girl, aged 8 years.—M. Hallé showed this case, which followed on a course of iodotannic syrup. There was a symmetrical eruption on the hands and feet of itching papules with flat tops, which had lasted three weeks. The situation was that of a polymorphous erythema but its characters resembled more those of acne.

Congenital Scoliosis.—M. Lance recorded the case of a girl, aged 13½ years, presenting all the characteristics of a scoliosis from congenital osseous malformation. X rays showed marked sacralisation of the fifth lumbar vertebra and of the sacro-iliac articulation which took in four vertebræ instead of three. The second lumbar, normal on the right, was much higher on the left side than a normal vertebra and had two bodies welded together, two posterior arches and two transverse and articular processes.

Cervical Rib in a Boy of 9 years.—M. Lance also showed a boy who for four or five weeks had suffered from pains in the right shoulder, most marked on waking in the morning. X rays showed a rib-like structure on the right side, which was small and did not reach above the transverse process of the first dorsal vertebra.

Mental Distribution in Tetany.—Dr. H. Lemaire gave notes of 40 cases of children with definite symptoms of tetany in whom there were signs of obsession and terror. One refused food for fear of being poisoned, in two others there was somnambulism, in two others stammering. In some there were fits of uncontrollable anger and visual hallucinations. These disturbances developed contemporaneously with the other signs of tetany, viz. convulsions, glottic spasm, and Chvostek's, Weiss's, Trousseau's and peroneal signs, but in 10 of them the tetany was latent and only disclosed by the above signs. Under the action of chloride of calcium and phosphorated cod-liver oil the symptoms became less marked. Neither alcoholism nor neuropathy in the patients nor congenital syphilis occurred with any noticeable frequency. Three of the subjects had a positive cutireaction to tuberculin, but none had meningeal reactions or signs of organic lesions of the nervous system.

In the following discussion M. Comby expressed his conviction that infantile tetany and the various mental troubles which accompanied it were only met with in hereditary neuropathies.

Hæmophilia: Death from Hæmatoma of Thigh.—MM. Nobécourt and Mathieu related the clinical history of a boy, aged 14 years. Injections of Witte's peptone, hæmostyl and maternal blood did not exercise any

appreciable influence on the hæmophilia, which had existed since the age of three years.

The Antiscorbutic Power of the various Constituents of Milk.—M. Lesné and Mlle. Dubreuil stated that vitamin C was unstable and scanty in milk. It existed in the mixture of lactose, salts and water. Since lactose was not antiscorbutic it must be admitted that this vitamin was in solution in the water of the milk, and it was perhaps to this fact that buttermilk and skimmed milk owed their dietetic qualities.

Positive Besredka Reaction in the Blood of the Cord of an Infant born of a Mother suffering from Tuberculous Meningitis.—MM. Cassoute and Raybaud related this case, in which owing to the serious condition of the mother premature labour was induced to save the child. The mother had a hemiplegic form of tuberculous meningitis confirmed by examination of cerebrospinal fluid and a positive Besredka reaction, and died three hours after labour. The case seemed to confirm Grancher's law with regard to the possession of antibodies by the child.

February the 20th, 1923.

Congenital Hydroceles.—M. Dufour, referring to the positive Wassermann reaction in the fluid of congenital hydroceles, reported at the December meeting (*v.* British Journal of Children's Diseases, 1923, xx, p. 170), stated his opinion that the ætiology of this affection was syphilis.

M. Comby reiterated his disbelief in this theory; the affection was extremely common, and spontaneous cure occurred provided it was not interfered with by surgical measures in a few weeks or months even when encysted.

M. Lesné was of the same opinion. Syphilitic hydrocele was exceptional, and always accompanied by sclerotic orchitis.

Congenital Cyanosis due to Tricuspid Stenosis.—MM. Salès and Florand related the case of a girl, aged 12 days, with intermittent cyanosis and paroxysmal dyspnœa. The autopsy showed tricuspid stenosis with atrophy of the right ventricle, intra-auricular and intra-ventricular communication, compensatory hypertrophy of the right auricle and patent ductus arteriosus.

Congenital Acromegaly (?) in an Infant of 9 months.—MM. Lereboullet, Maillet and Joannon.—The child had excessive development of the hands and feet. There was some evidence of rickets. Ossification of the bones was normal, as was also the sella turcica.

Meningococcæmia with Intermittent Fever.—MM. Debré and Ravina related the case of a boy, aged 11 months, who had fever of intermittent type with irregular exacerbations daily or every two days preceded by a rigor. There was no splenomegaly, nor meningeal signs. The child appeared perfectly normal in the intervals between the attacks. Blood-culture showed the presence of diplococci. Quinine produced no effect, but after five weeks of this fever 40 c.c. of polyvalent anti-meningococcic serum was injected subcutaneously, after which the temperature fell. Three days later a second injection was given, after which there were no further rises of temperature.

Primary Pneumococcal Peritonitis.—MM. Paisseau and Duchon related the case of a boy, aged 16 years, with septic diffuse peritonitis. He had suffered for several years from chronic scarlatinal nephritis with recent generalised œdema. Death took place in five days in spite of paracentesis and intramuscular and intraperitoneal injections of 30 c.c. anti-pneumococcic serum.

Two Cases of Poisoning from an Overdose of Atropine.—M. Schreiber recorded the cases of two brothers, aged 9 and 10 years, suffering from incontinence of urine, who were treated with 5 drops of a 1/1000 solution of neutral sulphate of atropine daily, increased to 7 drops on the third day. By an error five times this quantity was administered, and characteristic symptoms of poisoning ensued, which subsided without any bad results.

Fibroma of Plantar Fascia.—MM. Rocher and Bonnin related the case of a boy, aged 15 months, who for 3 months had a small tumour in the middle line of the sole of the left foot about the centre. After removal microscopical examination showed young fibroblasts with large oval nuclei with very scanty interstitial tissue.

Painful Sacralisation of Fifth Lumbar Vertebra.—M. Lance reported two cases. In the first, aged 11 years, X rays showed the fifth lumbar sacralised, the transverse process enlarged, welded to the sacrum, and the body united to the first sacral vertebra. The posterior arch, on the contrary, was not joined to the sacrum and showed an asymmetrical spina bifida. The sacrum was asymmetrical. In the second case, aged $14\frac{1}{2}$ years, there was complete sacralisation of the fifth lumbar vertebra. The lumbo-sacral dimple was well marked on the right, but imperceptible on the left side. A needle was inserted into the dimple to a depth of $5\frac{1}{2}$ cm. and 2 c.c. of a 1/200 solution of novocaine injected. After 10 minutes 3 c.c. of lipiodol were injected. Relief of pain ensued after four days and no further symptoms occurred. Vincent Dickinson.

Abstracts from Current Literature.

Nervous and Mental Diseases.

Congenital spastic paraplegia (*'Brit. Med. Journ.,'* 1922, i, *p.* 517).—**S. Bond,** at a clinical meeting of the Hampstead Division of the Metropolitan Counties Branch of the British Medical Association, showed a case in a boy, aged 6 years, in which laminectomy and posterior rhizotomy had been performed. Prior to the operation the boy had never walked, but he can now walk and run without support. His mental condition has markedly improved. J. Allan.

Hereditary cleido-cranial dysostosis (*'Brit. Med. Journ.,'* 1922, i, *p.* 682).—**S. T. Irwin,** at a meeting of the Ulster Medical Society, showed a case in a girl, aged 7 years, who was small for her age; head large in comparison with face; all fontanelles palpable, the anterior fontanelle being as big as a five-shilling piece; base of skull short as compared with width; face bones deficient in lime salts; nasal bones hardly recognisable on X-ray

examination. Dentition was somewhat delayed; the central portion of the lower jaw (the part derived from Meckel's cartilage) was better developed than the rami. Each clavicle consisted of two separate parts, the inner in each case being the longer; the parts were separated on each side by about a finger's breadth; only the outer ends were bony, the inner being cartilaginous. All the movements at the shoulder were greatly increased in range, and the shoulders could be brought together in front of the chest. There was no abnormality in chest or abdomen. Both femoral necks were in the position of coxa vara, and there was a well-marked lordosis on the lumbar spine. There was a deficiency of bone on the pelvis, the symphysis pubis and both rami as well as part of the ischial ramus being unossified. The proximal phalanx of the great toe was longer than normal, and the terminal phalanges of the fingers and toes were more pointed than usual.

J. Allan.

A case of Sydenham's chorea cured by lumbar puncture (*'Bull. Soc. de Péd. de Paris,'* 1922, xx, *p.* 292).—**M. Cassoute** related the case of a girl, aged 9 years, suffering from Sydenham's chorea, in whom lumbar puncture gave a tension of the cerebrospinal fluid of 45 c.c. Ten c.c. were withdrawn, bringing the tension down to 25 c.c. Examination showed a normal fluid with 0·22 albumin, 1 to 2 lymphocytes per c.mm. in Nageotte's cell and a negative Wassermann reaction. The following day the choreic movements had entirely disappeared, and had not returned 35 days later when she left the hospital. Recent researches on the pathogenesis of chorea explain these cases of amelioration and cure, since atrophy of the lenticular and caudate nuclei has been found with marked degenerative changes in the nervous elements in cases of Huntington's chorea. Although the anatomical investigations are less positive in the case of Sydenham's chorea, the clinical resemblance allows the supposition of infective encephalitis lesions in the corpus striatum. Pierre Marie and Trétakoff have also observed changes in the lenticular and caudate nuclei in the course of acute chorea. It must therefore be admitted that decompression of these areas following lumbar puncture, especially when the tension is high, may produce improvement and even cure of the choreic movements as in the case under observation.

Vincent Dickinson.

Pseudo-meningitis in infants due to worms (*'Gaz. des Hôp.,'* 1922, xcv, *p.* 373).—**E. Girbal** understands this to be a morbid state produced by the toxins secreted by the worms, characterised chiefly by headache, vomiting, intestinal troubles, rigidity of the neck, convulsions and ocular troubles. The cerebrospinal fluid is sterile. It is seen chiefly in infants with a nervous heredity. The symptoms mentioned come on in attacks, between which the infant appears normal and coma is unknown. The worms or their ova may be found in the stools, and the blood shows a marked esinophilia. The treatment of ascarides is by santonin with calomel, and of the oxyuris by enemata of 1 in 5000 perchloride of mercury.

J. Porter Parkinson.

A rœntgenographic study of the sella turcica in normal children (*'New York Journ. State Med.,'* 1922, xxii, *p.* 54).—**M. B. Gordon** and **A. L. Bell** reach the following conclusions:—(1) *Shape of the sella turcica:* The sella turcica in children can be classified in a general way by means of rœntgenograms into three groups according to shape—(*a*) circular, (*b*)

oval, and (*c*) flat and saucer shape. Groups (*a*) and (*b*) were found in all ages, while (*c*) was practically limited to the first three years. (2) *Shape of the sella as to size of the head:* The shape of the sella has no significance except in the case of the flat (*c*) type. This type is always found in small heads, but it does not necessarily follow that all small heads exhibit this type. (3) *Size of sella in comparison with age of child:* There is a marked variation for each age, both as to height and length of the sella for that particular age. The average height and length of the sella shows a comparatively rapid increase in the first two years with a gradual yet irregular increase from then on up to the age of twelve. There is a tendency for the average height increase to follow the average length increase. (4) *Size of sella as to size of head:* There is apparently no relationship between the size of the head and the size of the sella based on head measurements. (5) *Appearance and size of sella as to sex:* There is no difference in the occurrence of the three groups between the heads of boys and girls. There does not seem to be any influence of sex on either appearance or formation. The sella of girls, however, were greater in both length and height on the average. J. Allan.

Cerebral and cerebellar hæmorrhages in apparently healthy adolescents and children (*'Practitioner,'* 1922, cix, *p.* 425).—**C. O. Hawthorne** commences with an account of two cases of fatal intracranial hæmorrhages in healthy lads, aged 17 and 14 years. The first was attacked with headaches followed by vomiting and sudden death. Post-mortem a considerable hæmorrhage was found in the mid-cerebellum. The second suddenly became dazed, and was attacked with convulsive seizures affecting the legs. Coma supervened, with a pulse of 120 and a temperature of 103·5° F. Large hæmorrhages were found post-mortem in the left frontal lobe and both lateral ventricles. It will be noted that in these and seven cases quoted from the literature death followed shortly after the initial symptom. Cases are then quoted which succumbed at periods varying from a few days to weeks after the initial disturbance. Arterial and renal disease undoubtedly occur in some cases. Instances are quoted in which very slight injury was followed by fatal hæmorrhage, but in such cases the fall may have been the first symptom of the hæmorrhage and not its cause. On the other hand, after undoubted injury death may not supervene till after the expiration of seven or more weeks. It has been suggested that the wave of cerebrospinal fluid caused by injury ruptures small vessels in the pia mater, that necrosis of the brain substance occurs, and as this necrosis extends larger vessels are left unsupported and rupture. In another instance injury led to the formation of an arteriovenous aneurysm which ruptured into the substance of the hemispheres; the blood extending through the white matter the ventricles were reached. In the cases first mentioned no gross organic changes could be found in the walls of the cerebral vessels, being comparable with recurring retinal hæmorrhages, hæmaturia and epistaxis. Cerebellar hæmorrhages are not always fatal, and the cyst which remains may give rise to symptoms suggesting tabes, hysteria, or disseminated sclerosis. Christopher Rolleston.

Cerebral tumour (*'Irish Journ. Med. Science,' Fifth Ser.*, 1922, *p.* 141).—**V. M. Synge,** at the Royal Society of Medicine in Ireland, Section of Medicine, showed specimens from a case of brain tumour in a girl, aged 9 years, who had been ailing for 8 months, being out of sorts and suffering

from weakness of the right leg, followed in a short time by weakness of the right arm and by squinting in the left eye. During the eight months she had vomited on three or four occasions, but never complained of headache. A week before admission to hospital she suddenly lost the power of speech and could only swallow with difficulty. The child appeared wasted and neglected; the right arm and leg were paralysed; both knee-jerks were exaggerated, Babinski's sign was present on both sides, there was no ankle clonus, sensation appeared normal; abdominal reflexes present, incontinence of fæces and retention of urine at times; left facial nerve and left abducens paralysed; pupils reacted normally; slight doubtful nystagmus in the left eye; tongue could not be protruded. There was paralysis of the soft palate, pharynx, larynx and left vocal cord; patient could not speak and could not swallow; Kernig's sign present; flexion of the head on the trunk produced pain; chest showed signs of broncho-pneumonia. The child died a few days after admission to hospital. The post-mortem revealed a large tumour involving the left side of the pons, medulla, and cerebellum. It proved on section to be a sarcoma. J. Allan.

Brain tumours in young children (*'Amer. Journ. Dis. Child.,'* 1923, xxv, *p.* 257).—**M. Wollstein** and **F. H. Bartlett** record 7 cases of brain tumour in children, aged from 2 weeks to 3 years. All the tumours were gliomatous in type. Two were supratentorial and five infratentorial. One of the supratentorial tumours which occurred in an infant, aged 2 weeks, occupied the left cerebral hemisphere and was congenital in origin; the other, which occurred in a child aged 16 months, occupied the basal ganglia. In the 5 infratentorial tumours the vermis of the cerebellum was involved. The growth involved the right cerebellar hemisphere in 4, and the left in only one instance. The medulla and pons were infiltrated in 2 cases and the right cerebello-pontine peduncle was involved in 2 instances. The upper cervical end was compressed in 3 cases. Hydrocephalus was present in each of the 7 cases. The most striking feature was the variability in physical signs. Convulsions were absent in all but one, in which a convulsion occurred just before death. Vomiting did not occur as a significant symptom in any case. The spinal fluids showed nothing distinctive. Xanthochromia was present in only one case in which there was a cerebral hernia.
J. D. Rolleston.

Cerebral cyst in an infant (*'Amer. Journ. Dis. Child.,'* 1923, xxv, *p.* 435).—**H. G. Jacobi** states that cerebral cysts are of infrequent occurrence and their detection by clinical means is extremely difficult. In most cases the diagnosis is not established until the autopsy. Of 299 cases of brain tumour in children collected by Starr, 30, or nearly 10 per cent., were cysts, which were situated as follows: basal ganglion and lateral ventricle 1, pons 1, medulla 1, base 1, cerebellum 9, and centrum ovale 15; 2 of the tumours were multiple. The formation of cysts has been attributed to a variety of causes. Bruns has classified them into five groups according as they are (1) congenital, (2) parasitic, (3) traumatic, (4) the result of brain softening, (5) idiopathic. Jacobi records a case in a male infant, aged 1 year, presenting the following features of interest: (1) A sudden onset simulating an acute infectious process; (2) indefinite signs and symptoms making an *ante-mortem* diagnosis impossible; and (3) the presence of hyperglycæmia and glycosuria, possibly due to pressure of the cyst on the fourth ventricle. Death took place in coma after three weeks' illness, and

the autopsy showed a cyst containing creamy yellowish fluid situated beneath the posterior base of the right lateral ventricle. From the clinical analysis of the contents, which showed that the principal constituent was mucin, Jacobi is inclined to regard the cyst in his case as being of the proliferative type and of congenital origin. J. D. Rolleston.

Tay-Sachs' disease (*'Glasg. Med. Journ.,'* 1922, 1, *pp.* 193, 263 *and* 341).—**H. W. Torrance** presents a study of the symptomatology and pathology of three atypical cases in children, whose ages at death were respectively $4\frac{4}{12}$, $3\frac{2}{12}$ and $2\frac{5}{12}$ years. All three cases were in one family and the following is a summary of the clinical histories. Family history negative, there being no history of consanguinity, nervous troubles or luetic disease in the parents, ascendants or callaterals. Obstetric histories good—birth non-instrumental. One child was entirely bottle-fed, the other two partly breast-, partly artificially fed. Growth and development were normal until the age of one year, during which time they had had no illnesses. *Present illness:* The eldest child was a male, the other two females. In each case the onset of the disease dated from the age of one year. The disease was characterised by a progressive mental and physical deterioration. The initial observations were nystagmus, dental caries, cessation of attempts at walking and talking, the later symptoms being apathy, listlessness, "screaming fits," and progressive mental enfeeblement. *Condition on admission to hospital:* No gross congenital deformities. The first or eldest case was emaciated, the other two of fair size and development. All showed a varying degree of mental impairment, as evinced by inability to take any interest in their surroundings or to talk, irritability, "screaming fits" and apathy. There was also physical enfeeblement. None of the children could stand unsupported, and even sitting was an impossible accomplishment (except in Case 3). The arms were spastic, the legs only occasionally so. The arm- and knee-jerks varied, but on the whole were exaggerated. Babinski's sign was positive. The sphincters of the bladder and rectum were not under control. *Eyes*: Nystagmus present. Pupils negative. Double optic nerve atrophy. No macular changes. In Case 1 a patch of pigment was present at the temporal side of the disc (but not at the macula); in Case 2 there was no pigmentary change; while in Case 3 pigmentary changes at the periphery of the fundus were observed on the last occasion when examined. Sight and hearing were present in a limited degree, but the children did not understand what was said to them. Chest and abdominal examination negative. The Pirquet cutaneous tuberculin reactions were negative with bovine tuberculin (except in Case 1) and also with human tuberculin. All results of urinary and cerebro-spinal fluid examinations, as well as the Wassermann tests, were negative. The condition of each child became progressively worse, but death was due to an intercurrent disease. In each case the cause of death was broncho-pneumonia. *Summary of post-mortem findings:* Emaciation present in extreme degree in Case 1, to a less extent in Case 2, while the body of the third or youngest was well nourished. *Thorax:* In each case the lungs were congested and showed extensive scattered areas of broncho-pneumonic consolidation. Other thoracic contents negative. *Abdomen:* With the exception of some cloudy swelling and small areas of fatty degeneration in some organs—also a walnut-sized mesenteric gland in Case 1—nothing abnormal was found in the abdominal cavity. *Head.—(a) Membranes, sinuses and vessels:* Sinus thrombosis and a recent superficial hæmorrhage was observed in Case 1,

otherwise nothing abnormal was detected. (*b*) *Cerebro-spinal fluid:* No excess of fluid present. (*c*) *Cerebrum:* In each case the convolutional pattern showed no abnormality with regard to its complexity and arrangement. The gyri, however, in Cases 2 and 3 were shrunken and wasted, while the intervening sulci were correspondingly wide and gaping. Palpation of the cortex revealed firm indurated portions at the Rolandic areas and occipital poles. Gross horizontal sections of the cortex revealed nothing of importance except unusually dark and thin grey matter at the occipital poles in Case 1 and some blurring of the grey and white junction line at the motor areas in Case 2. (*d*) *Basal nuclei:* Right lenticular nucleus (in Case 1) was small and encroached upon by the white matter of the internal capsule, while the optic thalami showed some whitish streaks. Otherwise examination negative. (*e*) *Cerebellum:* A very definite atrophy of the whole substance of this part of the brain was apparent in each case. The laminæ were thin and wasted, the sulci deep and in some places wide, while the branchings of the arbor vitæ were shrunken and widely separated from one another. (*f*) *The pons, medulla, spinal cord and optic nerves* were diminished in size. The author contrasts his cases with others of this disease, and reviews many important points germane to the subject.

J. Allan.

Encephalitis lethargica (*'Lancet,'* 1923, i, *p.* 378).—**L. L. Fyffe** describes an epidemic of 4 cases among school-children in a remote village in Warwickshire. The school was in an excellent sanitary condition. The first case occurred in September, and the other three on October 9, 11 and 13. The second and third cases sat in close proximity to the first, but the fourth some distance away, but there is no doubt in the author's mind that the first one infected the others. The former probably acquired the disease at Walsall Wood near Birmingham. All the cases suffered from drowsiness and 3 from bad frontal headache. Only one of the cases had diplopia. Weakness and dragging of the lower limbs were noticed in two. By December 6 the children had recovered and were allowed to return to school. But after a few days 3 of them became hysterical and presented marked defect in memory for recent events. Their school work showed great deterioration. As late as February, 1923, these symptoms persisted, and in addition tremors of the legs, arms and face were noted in two of the patients. The reflexes were greatly exaggerated and in one there was slight spasticity. Only one of the cases had recovered completely.

Christopher Rolleston.

Encephalitis lethargica (*'Lancet,'* 1923, i, *p.* 731).—**A. J. Hall** in his Lumleian lectures described a typical case in a boy, aged 11 years, as far back as 1903. The onset was with fever, malaise and vomiting, followed by dyspnœa, tetany and dysphagia. On the second day right facial palsy and aphasia with jerking of the limbs were noted. Inco-ordinate movements of the eyeballs not amounting to nystagmus were recorded. He was drowsy all day and restless and irritable at night. There was a positive Kernig's sign. A slight permanent facial paralysis persisted for years with spasmodic twitching. He is now a healthy man. J. A. Nixon also recorded a case in a boy in 1908, which was followed by the Parkinsonian phenomena. Notification was initiated in this country in 1919, and the numbers notified yearly since then are 541, 890, 1470, 454. Epidemics begin in November, reach their maximum in February or March, and disappear in April or May.

No age is exempt. Mortality is high in the first 5 years of life, lowest between the ages of 10 to 15. Pregnant women are specially liable, and a case of a healthy Cæsarian infant is mentioned. Epidemics are recorded by MacNalty in a girls' school at Derby, where, out of 12 cases, 5 died. Krause records an outbreak of 23 cases in an institution for girls in the Lower Rhine; 13 died. Babies born to infected mothers are readily infected. Myoclonus was present in a baby during parturition. A mother infected with encephalitis persisted in suckling her four-months-old infant, who sickened 9 days after the mother, and died in 5 days. The incubation is from 1 day up to 2 weeks or more. Lethargy may last for days, weeks, or rarely months. It may disappear and recur at long intervals. In a girl of 15 the attacks occurred every month for 5 years. Simulation of choreic movements may be very close. A fatal case is quoted in a boy of 16 affected with noisy nocturnal delirium but without fever. Fits of epileptic type are not uncommon, and may occur at any period of the illness. A case is quoted of a little boy who developed a series of fits during the third week of convalescence with a rise of temperature lasting for only a few hours. He made an uneventful recovery. Bilateral parotitis may be an early symptom. Stuporose lethargy in young children with signs resembling meningitis is of bad prognosis. During convalescence the good child becomes naughty, the clever child a dunce. Restlessness, irritability, paroxysms of rage, greediness, aggressive behaviour and morbid sexual tendencies are common results. Nocturnal restlessness in children may be an early or late phenomenon. Towards evening the child becomes restless, irritable and unmanageable, and may run about till morning, when it falls asleep. On waking the patient appears almost normal. In the early or other stages polypnœa may alternate with dyspnœa. Obesity following encephalitis occurred in a girl, aged 13 years. She gained 21·3 kilos in 4 months. Immobile facies and limited rigidity occur in children, but the affection is not so extensive in distribution as in paralysis agitans. CHRISTOPHER ROLLESTON.

Behaviour changes supervening upon encephalitis lethargica in children (*'Lancet,'* 1922, II, *p.* 901).—**G. A. Auden** says that 15 cases out of those notified in Birmingham for 3 years have shown some mental change. Some drift into imbecility, others are only perverse and a nuisance to their teachers and friends. Six cases are described, all of whom showed emotional instability and a lack of inhibition leading to aberration of conduct such as thieving, violence to school-fellows, self-assertion and sexual offences. A marked restlessness, especially towards night-time, is another characteristic, and is accompanied by nocturnal wakefulness and sometimes by hallucinations. There is also defective concentration. Similar defects in conduct are noticed in epileptics and patients affected with chorea. Complete recovery from the physical defects resulting from encephalitis is the rule, and the same can be said for the intellectual and moral failings. Therefore these children should not be provided for under the Mental Deficiency Act, but rather under the Defective and Epileptic Children Acts of 1899 and 1914. For the children of the wealthy a prolonged holiday at the seaside is recommended. CHRISTOPHER ROLLESTON.

The effect of lethargic encephalitis on the intelligence of the child (*'Glasg. Med. Journ.,'* 1923, I, *p.* 134).—**H. J. Watt,** at a meeting of the Royal Medico-Chirurgical Society of Glasgow, reported the results of his application of the Binet (Burt) tests to a score of children who had had

the disease. The mental ratio was found to be in the average 68 ± 8. This figure may be compared with the average mental ratio of 114 children in hospital—88 ± 16. The difference seemed significant. The intelligence of the child seemed to be distinctly impaired by the disease, but the number of cases examined by this method did not, however, warrant very definite statements. J. Allan.

Precocious puberty following epidemic encephalitis (*'Med. Klin.,'* 1922, xviii, *p.* 864).—**F. Stern** reports a case of precocious puberty occurring in a previously infantile boy, aged 13 years, following an attack of epidemic encephalitis. In the absence of an anatomical examination the causes of the condition could only be conjectural. There was no evidence of a testicular or suprarenal tumour, but Stern suggests that the condition was due to involvement in the encephalitic process of the pineal gland, affection of which is often associated with precocious puberty. J. D. Rolleston.

The sequelæ of lethargic encephalitis in children (*'Glasg. Med. Journ.,'* 1923, i, *p.* 126).—**G. H. Anderson** submits observations based on a study of thirty-three cases. The sequelæ in the order in which they appeared were (1) nocturnal wakefulness and excitability, and (2) psychical disturbances, which include changes in disposition, mental impairment, and habit peculiarities. The nocturnal wakefulness and excitability, developed a short time after apparent recovery from the primary attack, were characterised by persistent insomnia with extreme motor unrest, and excitement during the night followed by more or less marked lethargy by day, and were roughly divisible into four phases as follows: (1) In the early part of the night the patients apparently wished to sleep, but were too uncomfortable to do so. (2) Later they became resigned to wakefulness, shouted for toys, destroyed the bedclothes, climbed over the furniture, were noisy, and tended to show dirty habits. (3) Still later they developed a condition resembling acute mania, during which they were quite uncontrollable. (4) Towards morning they fell into a sleep, which, by the time normal children were waking up, had become abnormally sound. Of the psychical disturbances—which in some instances occurred along with sleep disturbances, but in most instances followed on a long period of nocturnal insomnia—the most important was a complete change in disposition. There was little or no mental impairment. In the ten cases who showed definite mental impairment, the characteristics of the changed disposition were not present to any marked extent. The habit peculiarities most frequently encountered were spitting, which did not appear to be due to a true sialorrhœa, and hysterical dyspnœa, which was characterised by paroxysmal attacks of "panting like a dog." Both of these habits usually developed during the period of night restlessness, but persisted long after the normal sleep sequence had been regained. J. Allan.

The after-effects of epidemic encephalitis in children (*'Lancet,'* 1921, ii, *p.* 491).—**D. Paterson** and **J. C. Spence** investigated the after-effects of epidemic encephalitis in twenty-five cases aged between 3 months and 11 years, observed by them in the Hospital for Sick Children and at St. Thomas's Hospital. Although only one of the cases was fatal, only one female made complete recovery. The mental changes varied from complete idiocy to slight mental deficiency, and also showed themselves as affections of the character and habits of the child. The physical changes included diplegia, hemiplegia, symptomatic paralysis agitans, muscular rigidity and

tremors. The younger the child at the onset of the disease, and the longer the acute stage of the illness, the greater was the degree of subsequent mental deficiency. J. D. Rolleston.

Treatment of insomnia following epidemic encephalitis (*'Deutsch. med. Woch.,'* 1921, xlvii, *p.* 1545).—**F. Lust** found that the chronic insomnia following encephalitis described by Hoftstadt and others (*v.* British Journal of Children's Diseases, 1921, xviii, p. 69) was best treated by intramuscular injections of milk in doses of 2 c.c., the action of which was apparently connected with a rise in the body temperature, as the narcotic or sedative influence of this treatment was noted only as long as the temperature was raised. Milk did not possess a specific influence, as other substances which caused a rise of temperature, such as sodium chloride by mouth or subcutaneously, and to a certain extent hot baths and hot packs, had a similar effect. Lust suggests that the hypothetical sleep centre is in close proximity to the heart centre. J. D. Rolleston.

The respiratory exchange in cretinism and Mongolian idiocy (*'Quart. Journ. Med.,'* 1922, xvi, *p.* 11).—**G. B. Fleming** found that the basal metabolism was unduly low in the untreated cretin, and that thyroid treatment raised it to the normal level. In 6 Mongols examined the basal metabolism was normal. In view of Thursfield's opinion (*vide* British Journal of Children's Diseases, 1921, xviii, p. 21) that thyroid extract does good in some cases, one Mongol was given thyroid for 5 weeks, at the end of which time his basal metabolism was determined and found to be practically unaffected. In a Mongol with a temperature of 101° at the commencement of an attack of measles the metabolism was unduly high, showing that in Mongols fever causes a rise of metabolism similar to that found in normal children. J. D. Rolleston.

The brain in Mongolian imbecility (*'La Pediatria,'* 1921, xxix, *p.* 49). —**O. Cozzolino,** after attending to the case reported by the abstractor (*vide* British Journal of Children's Diseases, 1916, xiii, p. 243), records the case of a Mongolian imbecile whose brain presented the following characteristics: abnormally low weight (830 grm. instead of the normal 942 grm. in a child of 21 months), asymmetry of the two hemispheres, inferior development of the frontal and fronto-parietal regions, reduction in thickness of the cortical grey substance, relative simplicity of the cerebral convolutions with great reduction in the number and dimensions of the transitional and secondary sulci, depressions in cortex, and presence of certain characteristics which are generally regarded as ancestral or regressive features and due to arrest of development, viz. lesser development of the inferior frontal convolution, presence of an ethmoid prominence on the orbital aspect of the frontal lobe, extension of the parieto-occipital fissure on the outer aspect of the hemisphere, reduction in size of the quadrilateral lobe, and simplification of its shape, especially on the right. J. D. Rolleston.

Mongolian imbecility in twins (*'Nederl. Tijdschr. v. Geneesk.,'* 1922, ii, *p.* 22).—**T. Halbertsma** records five cases of Mongolian imbecility in twins. In the first case both were males, aged 18 months; one was a typical Mongol and the other was normal. The mother was aged 36, and this was her sixth pregnancy. The Wassermann reaction was negative. In the second case both were females, aged 4 months. One was a typical

Mongol, while the other was normal. The mother was 41. She had been pregnant 14 times, including 3 miscarriages. In the third case one was a Mongol male and the other a normal female, aged 2½ years. The mother was 43 and had been pregnant 7 times. In the fourth case one was a Mongol male and the other a normal female aged 2½ years. The mother was 38 and the father 48 at the time of their birth. In the fifth case a miscarriage had taken place at the third month, and a Mongol had been born six months later. The mother was aged 44 and the father 48. There had been 9 pregnancies, including 2 miscarriages. Only 11 other cases of Mongolian imbecility in twins have been recorded, in only two of which, reported by Hjorth and De Brun respectively, both twins were Mongols.

J. D. Rolleston.

Mongolian idiocy in one of twins (*'Journ. Amer. Med. Assoc.,'* 1922, lxxviii, *p.* 13).—**S. McLean** records a case which is not included in Halbertsma's review of the literature. The father and mother were both healthy; the former was 42 and the latter 36 at the time of the birth of the twins. The three previous pregnancies had resulted in normal children. The Mongol was a male and the normal child a female. The Mongol died at the age of 6½ months from acute enteritis. There was no autopsy.

J. D. Rolleston.

Mongolian idiocy in a Chinese boy (*'Journ. Amer. Med. Assoc.,'* 1922, lxxix, *p.* 14).—**I. Harrison Tumpeer** reports the first case to be described of Mongolian idiocy in a Mongolian, all the previous cases having been recorded in members of the Caucasian race. Normal children were born of the same parents both before and after the patient, but the father was 57 and the mother 29 at the time he was born. There were no other retarded children in the family, which consisted of eight other children. The fact that the basal metabolism was not lowered confirms the view that Mongolian idiocy is not primarily a thyroid hypofunction.

J. D. Rolleston.

The place of disorders of conduct in pædiatrics (*'New York Journ. State Med.,'* 1922, xxii, *p.* 168).—**I. S. Wile** points out pædiatrics cannot claim to be the branch of medicine dealing with the health and welfare of children unless it takes cognisance of all of the child. It demands further inquiry into the problems of the instincts, the emotions, the sentiments, the habits and the psychological trends, as modified by the physical, mental and moral factors which enter into its daily life, and are integrated into the personality of childhood. After all, childhood finds itself in the expression of personality, and disorders of conduct are symptoms of interferences with the complete development of the social personality. Among the points considered are timidity, destructiveness, lack of psycho-motor control, temper, viciousness, dawdling, uncontrollability, incorrigibility, etc.

J. Allan.

Early effects of combined endocrine therapy in defective children (*'New York Med. Journ.,'* 1922, cxvi, *p.* 147).—**L. V. Kear** reports two cases of two children, aged about 6 years. They both had marked inco-ordination of the head, body, arms and legs, one patient walking with a halting motion and the other unable to walk. Neither could dress itself, but both talked fairly well, though the mental processes were backward. Examination showed no evidence of any gross disease such as Friedreich's ataxy or

Tay-Sachs' disease. The children were put on a mixture of parathyroid gland $\frac{1}{10}$ gr., pineal gland $\frac{1}{10}$ gr. and suprarenal gland 3 gr. After six months of this treatment both children lost the inco-ordination, and improved markedly both mentally and physically.

J. Porter Parkinson.

Reviews.

Introduction a la Médecine des Enfants: Hygiène, Allaitement, Croissance, Puberté, Maladies du nouveau-né. Par les Drs. A. B. Marfan, J. Andérodias, René Cruchet, Professeurs et agregés aux Facultés de Paris et de Bordeaux. Deuxième édition. Paris: J. B. Baillière et Fils, 1923. Price 35 fr. paper, 42 fr. 50 bound.

This, the first volume of an extensive work entitled 'La Pratique des Maladies des Enfants,' has met with such success that a second edition has been called for even before the publication of the last two of the nine volumes which are to complete the whole work.

M. Marfan opens the book with a general consideration of childhood from the physiological and pathological points of view. Infant feeding is treated at great length, and the reasons for the superiority of human over cow's milk are discussed in detail, the writer upholding the theory of specific enzymes contained in the milk of each species. In this section, as throughout the volume, artificial feeding meets with unqualified condemnation, and heads the list of predisposing causes of almost every disease mentioned.

M. Andérodias, who is responsible for the second and most extensive section of the book, deals in minute detail and at great length with every aspect of infancy from birth until the age of about two years. The anatomy, physiology and development of the normal fœtus having been passed in review, the author proceeds to an elaborate study of the treatment of the newborn, starting with the ligation of the cord (which, we note, is to be secured by transfixion), and dealing with the prophylactic treatment of the eyes and with all the domestic details of baths, sleep, apparel, etc. Infantile diseases, both medical and surgical, are treated rather shortly in comparison with the great space allotted to such subjects as the best method of applying a binder. Sclerema obtains considerable attention, however, and the relation of this disease to temperature is stressed.

Leaving the study of the newborn infant, M. Andérodias now gives a short account of the normal rate of growth and development of the infant with a paragraph on dentition and its irregularities, and then passes on to the question of infant-feeding, which occupies the bulk of this section. Breast-feeding, by the mother and by wet-nurses, and the management thereof, are exhaustively treated, and a short section on artificial feeding follows, accompanied by graphic illustrations of the rise in infantile mortality, associated with the absence of breast-feeding. A couple of chapters on the care and feeding of premature children and on infantile mortality bring this section of the book to a close.

The third section of the volume is a study of childhood and puberty, in which M. Cruchet discusses the mental and physical growth at the various stages, giving many interesting tables of comparison, the results of his own

investigations. He then deals with the question of food, clothes, education and exercise. The diseases of this period are only lightly touched on, as they are fully treated in later volumes.

The book is a careful and exhaustive study of childhood, mainly from the point of view of preventive medicine. It contains many good and useful charts and tables, and a few rather indifferent illustrations. It has evidently gained many admirers in France, and rightly so; but we think it might be improved by further compression. Yet it is a cheering thought that a book so large in size and so exhaustive in the details of its subject finds such a successful sale. R. M.

Des Kindes Ernährung, Ernährungsstörungen und Ernährungstherapie. Ein Handbuch für Ärzte. By Prof. A. Czerny and Prof. A. Keller. Zweite, volkommen umgearbeitete Auflage. 1 Band, 1 Teil. Vienna and Leipzig: Franz Deuticke, 1923.

We have before us the 688 pages of the first part of the first volume of the second edition of Czerny and Keller's work on the nutrition of the child, nutritional disorders and their treatment. In its twelve chapters it provides a broad and bulky foundation upon which further parts of further volumes are to be erected. It contains a complete study of the normal child. The first chapter is entitled "The First Day of Life." The three following deal with the feeding of the child in the early days of life on its mother's breast, by a wet-nurse, and with artificial substitutes respectively. In the following chapters the diets available and advisable during the first year and the digestion and metabolism in the normal child are fully discussed.

The opening of the book is interesting because of the full discussion of the bacteriology of the alimentary canal and the part played by the intestinal flora in the first days of life. The authors regard the food which is given in the first days of life as playing the chief part in determining the character of the bacterial growth in the bowel, and find in disturbances of the normal insemination the explanation of failure of digestion and of faulty nutrition.

On p. 71 the question is asked, "Must the child only receive in the artificial food as much protein as is contained in the breast milk, or can it tolerate an excess without ill-effect?" Czerny and Keller have no doubt of the answer. "The sound child can deal with a considerable excess and take no damage." "We do not doubt," they say, "the good results of our American colleagues with their percentage method, but we think that the same good effect might have been achieved by simple means. No doubt the diet has been well adjusted to the needs of the child, but at the same time the infant organism within wide limits has the power to adapt itself to the diet."

Almost every paragraph contains a reference to the writings or views of some previous worker in the field; yet the book leaves one in no doubt that it is written by men with long and wide experience. It is because we feel that the authors are speaking with knowledge and with judgment that we have found interest in what is a review of the present position, sometimes, too, a historical survey of the past, rather than an exposition of the belief and practice of two famous teachers. Perhaps this atmosphere of review is inevitable in the first part of a first volume, and will be less apparent as the authors in later parts of later volumes approach the heart of the subject. Of this volume one can only say that a great deal of what is well said here has many times been equally well said before. H. C. C.

DIGESTIVE DISTURBANCES OF INFANTS AND CHILDREN RÖNTGENOLOGICALLY CONSIDERED. By C. G. KERLEY, M.D., and L. T. LE WALD, M.D. New York: P. B. Hoeber, 1923. Price $12.

THIS beautiful monograph, the third volume of the 'Annals of Roentgenology,' is introduced by a short note by Dr. W. A. Downes on the "Surgery of Infants," chiefly in reference to pyloric stenosis. It combines the valuable results of the observations of a consulting physician at a hospital for infants and a professor of röntgenology, working in collaboration. Eighty pages of text, including a preliminary chapter on the technique of administering opaque meals to infants, are devoted to a description of various malformations and disorders of the digestive apparatus, and are profusely illustrated with drawings and radiographs. The remainder consists of fifty-four radiographic plates of the various conditions. The treatment adopted and the operative findings are described shortly, as well as the illustrations, in English, French and Spanish. Stenosis and atresia of the œsophagus, cardiospasm, stenosis and spasm of the pylorus, ptosis, dilatation and syphilis of the stomach, numerous affections of the intestines, and the influence of posture on digestion are all illustrated. Chapters are devoted to hernia of the diaphragm, tuberculous peritonitis, transposition of the viscera, abdominal tumours and foreign bodies in the alimentary tract. Malformations of the rectum and anus are not included. The book is an admirable example of the printer's art, well printed on thick glazed paper, with magnificent illustrations of the highest quality. It should be in the hands of every radiologist and in the library of every hospital for children, as a work of reference for the comparison of radiograms of doubtful cases, with the verified results here recorded. And every physician interested in diseases in children will find it of value, as well as a work of art.

E. C.

OPENING DOORS. By JOHN THOMSON, M.D. London and Edinburgh: Oliver & Boyd, 1923. Price 6d. paper, 1s. 6d. cloth, or 25s. per 100.

THIS little book, as its sub-title tells us, is "for the mothers of babies who are long in learning to behave like other children of their own age." A book for mothers, if it is to be of service, must be something very different from a book intended for doctors, or students, or even nurses or health visitors. No mother is interested in the scientific aspects of the misfortune which has befallen her. Her interest is in the individual with which she has to deal, and she is easily frightened and discouraged by a too frank exposition of the difficulties and dangers which surround her. The mother who buys a text-book upon infant dietetics usually pays for it with peace of mind.

It is because Dr. Thomson's wisdom and understanding so fit him for the task that this book, for all its small size, has attracted so much attention. It gives just the help and encouragement and guidance which the mother needs, and it gives it in a way that will not alarm, or offend, or confuse.

H. C. C.

PRÉCIS CLINIQUE ET OPÉRATOIRE DE CHIRURGIE INFANTILE. By L. OMBRÉDANNE. Pp. 1140; 584 figs. Paris: Masson et Cie, 1923. Price 40 fr.

THIS book is very typical of the better class of French medical literature. It aims high, for it attempts to combine the scientific pathology of

everything in connection with the diseases of children with a full clinical description and the treatment of the disease, whereas books upon children's diseases in this country are usually written purely from the clinical standpoint. As a result a thoroughly trustworthy and interesting work has been produced. Of the chapters some require special mention and commendation, that upon fractures and injuries to bones and on diseases of joints being particularly worthy of praise. The treatment of the fractured clavicle with the hand behind the back is quite new to the reviewer, and from the illustrations appears to be extremely good, though whether it can be very comfortable for the child when lying is another point. The form of arthrodesis as recommended for the shoulder-joint seems excellent and likely to be effective, and to the reviewer is also new and original. The illustration is very convincing.

The congenital abnormalities of development are very fully described and illustrated throughout the book, those of the genito-urinary tract being especially good. Calculus formation in children, however, seems to be rather inadequately described.

Umbilical hernia in the infant is apparently frequently operated upon in France, and the operation recommended is moderately severe, considering that in this country we believe that the operation is very rarely called for if moderate care and trouble are taken by the parents or guardians of the child. The operation is an importation we owe to the "get well quickly school" from across the Atlantic.

The chapter on face and neck development is very good, and we note with pleasure that the so-called old-fashioned operation of Langenbeck is recommended for cleft palate, in place of certain others which have had a short vogue in this country.

We note with pleasure the differentiation between the acute retro-pharyngeal abscess and the tuberculous prevertebral cold abscess in its vincinity, and the different courses of treatment advised for each.

Perhaps one might say that there are many subjects included in the book which might have been omitted from one dealing solely with children's diseases, such as hammer-toe, ingrowing toe-nail and hæmatocolpos, but no great complaint can be raised on this score, and for really unfavourable criticism one must fall back upon the shape of the book, which is fat and plump, and upon the heaviness of the paper, but this latter is presumably due to the fact that the illustrations number nearly 600, and many could not have been reproduced upon lighter paper. The illustrations, which consist of photographs, line drawings and diagrams are very good, many of the latter being very original. The book can be thoroughly recommended.

D. C. L. F.

Lehrbuch der Grenzgebiete der Medizin und Zahnheilkunde für Studierende, Zahnärzte und Ärzte. Bearbeitet und Herausgegeben von Dr. Julius Misch. Zwei Bände. Dritte Vollständig durchgesehene verbesserte und vermehrte Auflage. Leipzig: F. C. W. Vogel. 1923. Grundpreis. M. 40.

The success of Dr. Julius Misch's text-book on the relations of medicine and dentistry is shown by the fact that a third edition has appeared within six months after the second (*see* British Journal of Children's Diseases, 1922, xix, p. 164). The whole work has been thoroughly revised, the principal changes having been made in the chapters on syphilis, neurology and industrial diseases.

J. D. R.

English Physicians of the Past. By R. T. Williamson, M.D.Lond., F.R.C.P., Consulting Physician to the Royal Infirmary, Manchester. Newcastle-upon-Tyne: Andrew Reid & Co., Ltd., 1923. Pp. 96. Price 2s. 6d. net.

Dr. Williamson's endeavour to provide for junior medical men and students the opportunity of studying brief biographical records of celebrated English physicians of the past meets with our cordial welcome. And especially so, since of recent years it has been the adopted *rôle* of some to decry the study of medical biography except insomuch as it relates to the history of medical ideas.

The only criticism we have to make upon Dr. Williamson's little volume is that the absence of memoirs of Matthew Baillie, Edward Jenner and other masters of medicine makes it incumbent upon him to continue the series. The study of medical history and medical biography has been too long neglected in this country: the absence of these subjects from the medical curriculum constitutes a flagrant anomaly. C. G. P.

The Rockefeller Foundation: A Review for 1922. By George E. Vincent. New York, 1923. Pp. 59.

The contents of this small and unpretending booklet are of singular interest forming a record not only of the world-wide activities of the Rockefeller Foundation during 1921, but giving an epitome of the work carried out under its ægis during the ten years of its existence. The list of grants made in 1922 is a lengthy one and includes the endowment of chairs of medicine and of surgery in Hong-Kong University; the financing either in whole or in part of medical schools and colleges in China, Siam, Brazil and other countries; the provision of fellowships in public health, medicine, nursing and chemistry; and the forwarding in countless ways of public health work in various parts of the world. The attention and the resources of the Foundation have, indeed, of late increasingly been concentrated upon the cognate problems of public health and of medical education, and the review outlines with great clearness both the general policy of the Rockefeller Foundation as it has crystallised out during its ten years of work, and also the means by which the Foundation is seeking to promote—in the words of its charter—"The well-being of mankind throughout the world."

E. M.

Dedication Ceremonies and Medical Conference, Peking Union Medical College. Peking, 1922. Pp. 416.

In this imposing volume are collected the addresses and papers delivered at the dedication of the new buildings of the Peking Union Medical College, held in Peking from September the 15th to the 22nd, 1921. After a short history and description of the College from its earliest beginning in 1906, and an account of the dedication ceremonies, there follow *in extenso* the addresses given at the general morning and evening sessions together with those in the various clinical sections. Among the latter are several papers of great interest, particularly from the Department of Obstetrics and Gynæcology, illustrating the enormous wealth of clinical material available for study in China. Since, however, none of these papers deals with any branch of children's diseases, it would be out of place here to comment upon them in detail.

The book is well got up, printed on good paper, and contains a number of excellent illustrations. E. M.

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